

```
/*  ESDT Descriptor Template Version Number: B0-VER2.4 (19 Oct. 2015) */
/*
/*
/*  The template below is NOT an example B.0 Descriptor File!!!!!! */
/*
/*  Rather, this file is a template of the structures to be used in */
/*  describing an Earth Science Data Type (ESDT) following the ECS */
/*  Release B.0 Science Data Model, as defined in the document "Release */
/*  B Science Data Processing Segment (SDPS) Database Design and */
/*  Database Schema Specifications for the ECS Project" (May 1996) */
/*  [311-CD-008-001], referred to as DID311, and as modified in */
/*  "Release 6B Implementation Earth Science Data Model for the ECS */
/*  Project" (October 2002) [420-TP-023-001] and in "Release 7 */
/*  Implementation Earth Science Data Model for the EMD Project" (May */
/*  2004) [420-EMD-001]. */
/*
/*  This template also includes a few structures needed for non-science, */
/*  system collections.  These are identified in the comments. */
/*
/*
/*  Modifications: */
/*      24 November 1997   For VersionID in both the COLLECTIONMETADATA */
/*                        and INVENTORYMETADATA groups, removed the */
/*                        quotation marks (i.e., value is then set as an */
/*                        int), and add "(in the range 0-255)" to the */
/*                        comment. */
/*
/*                        For VersionID in the INVENTORYMETADATA group, */
/*                        the TYPE is changed from STRING to INTEGER */
/*
/*                        For VersionID in the CollectionAssociation */
/*                        group, removed the quotation marks */
/*
/*                        Added object description for */
/*                        VersionDescription to the ECSCollection group */
/*                        of the COLLECTIONMETADATA group. */
/*
/*                        Replaced the ParameterRange object with */
/*                        ParameterRangeBegin and ParameterRangeEnd. */
/*
/*                        Replaced the placeholder in the SERVICES group*/
```

```

/*          for the Acquire Signature with that recently */
/*          supplied by DSS.                               */
/*          */                                             */
/*      8 December 1997  Change version number of the descriptor file */
/*          template to 1_9                                   */
/*          */                                             */
/*          Added CHECK_ORDER = FALSE to the Acquire       */
/*          This is set TRUE if user to be billed          */
/*          */                                             */
/*          Corrected the name of OrbitalParametersPointer*/
/*          to OrbitParametersPointer                      */
/*          */                                             */
/*          Added "type" object to the collection metadata*/
/*          for use with some system ESDTs                 */
/*          */                                             */
/*          Removed from the comments the BNF, since       */
/*          including it in the template was causing       */
/*          confusion for some people                       */
/*          */                                             */
/*      12 February 1998  Change version number of the descriptor file */
/*          template to 2_0                                   */
/*          */                                             */
/*          Added "DLL" object to the collection metadata */
/*          for identifying the specific DLL shared object*/
/*          to be used with the ESDT                       */
/*          */                                             */
/*      21 August 1998   Added VerticalSpatialDomain group, which */
/*          contains the VerticalSpatialDomainType and     */
/*          VerticalSpatialDomainValue attributes, to the  */
/*          collection metadata                             */
/*          */                                             */
/*          Added SpatialSearchType attribute to the      */
/*          collection metadata                             */
/*          */                                             */
/*          Changed version number of the descriptor file */
/*          template to 2.1                                  */
/*          */                                             */
/*      30 September 1998 Added optional DeleteFromArchive service to */
/*          service section ODL                             */
/*          */                                             */
/*          Changed version number of the descriptor file */

```

```
/*          template to 2.2          */
/*          */
/*    01 November 2004    Added DatasetDisclaimerPointer,    */
/*          ECSCollectionGuidePointer,    */
/*          ECSCollectionGuidePointerComment,    */
/*          MiscellaneousInformationPointer and    */
/*          MiscellaneousInformationPointerComment    */
/*          attributes to the collection level metadata    */
/*          */
/*          Removed the following from the ACQUIRE    */
/*          service ODL due to distribution options being    */
/*          moved to the Registry: CHECK_EXTRA,    */
/*          DDISTMEDIATYPE, DDISTMEDIAFMT, FTPUSER,    */
/*          FTPPASSWORD, FTPHOST, and FTPPUSHDEST    */
/*          (NCR 28032)    */
/*          */
/*          Added Value = "Not Investigated" to the    */
/*          ScienceQualityFlag to set a default value    */
/*          (see NCR 25538)    */
/*          */
/*          Changed Data_Location from "DAAC" to "PGE"    */
/*          for OperationalQualityFlag and    */
/*          OperationalQualityFlagExplanation in order to    */
/*          reflect current usage (see NCR 18404)    */
/*          */
/*          Changed representation of GRingPointLatitude    */
/*          and GRingPointLongitude values from    */
/*          xx.xx,yy.yy,zz.zz to xx,yy,zz in order    */
/*          maintain consistency with the representation    */
/*          of other coordinate attribute values    */
/*          */
/*          Corrected the VALIDRULE "Match" example    */
/*          */
/*          Added brief description of VALIDRULE    */
/*          "Expression"    */
/*          */
/*          Changed "UserString" to "USERSTRING" in the    */
/*          Acquire service ODL (NCR 29481)    */
/*          */
/*          Added GranuleTimeDuration attribute    */
/*          (NCR 36600)    */
```

```

/* */
/* Changed the notation for the 'Value =' label */
/* for all collection attributes to give the */
/* variable type. Also, updated associated */
/* comments */
/* */
/* Added comments to 'TYPE = "STRING"' label for */
/* inventory attributes to indicate the maximum */
/* value length */
/* */
/* Formatted first line of comments to be */
/* consistent with descriptor dating convention */
/* */
/* Revised the SpatialSearchType comment because */
/* values other than "Orbit" are now supported */
/* */
/* Revised the ECS Data Model document reference */
/* */
/* Revised the location of the ODL documentation */
/* */
/* Added Browse-specific inventory attributes */
/* */
/* 12 September 2011 Added ScienceMimeType, BrowseMimeType, */
/* BrowseOnlineMimeType, and DataFileFormat */
/* attributes */
/* */
/* 18 April 2014 Added DataModelType attribute */
/* */
/* Changed version number of the descriptor file */
/* template to 2.3 */
/* */
/* 19 October 2015 Added Project group of attributes to set the */
/* EMS "Mission" to something other than the */
/* PlatformShortName for multi-platform missions */
/* (like Operation IceBridge) */
/* */
/* Added CollectionDataType attribute to */
/* identify non-science-quality products such as */
/* near-real-time data */
/* */
/* Revised maximum attribute lengths for the */
/* */

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/*          following attributes: ArchiveCenter,          */
/*          BrowseMimeType, BrowseOnlineMimeType,        */
/*          CampaignLongName,                            */
/*          CitationforExternalPublication,              */
/*          CollectionDescription, DataFileFormat,       */
/*          LongName, ProcessingCenter, ScienceMimeType, */
/*          ShortName, StreetAddress, type,              */
/*          VersionDescription                            */
/*                                                    */
/*          Changed version number of the descriptor file */
/*          template to 2.4                             */
/*                                                    */
/* The classes and attributes of the B.0 Science Data Model are */
/* expressed below in Object Description Language (ODL) notation. */
/* Documentation on ODL is available from URL                */
/*   http://pds.jpl.nasa.gov/documents/sr/Chapter12.pdf */
/*                                                    */
/* In generating the ODL syntax below, a representation of the B.0 */
/* Science Data Model in the Backus-Naur Format (BNF) was employed. */
/* The rules used in the conversion from the BNF to ODL are:    */
/*                                                    */
/* 1) Group Names are taken from the Class Names employed in the */
/*    B.0 Science Data Model.                                  */
/* 2) Object Names are taken from the Attribute Names employed in */
/*    the B.0 Science Data Model.                              */
/* 3) Multiples of single attributes employ one-dimensional arrays, */
/*    with the size indicated by NUM_VAL in the object description. */
/*    For objects in the COLLECTIONMETADATA group, NUM_VAL must */
/*    be set to the actual number of values provided.          */
/*    For objects in the INVENTORYMETADATA group, NUM_VAL must */
/*    be set to the maximum number of values expected.         */
/* 4) If an object description is for an array, the array values */
/*    are comma delimited and parentheses enclose the group of */
/*    values, e.g.,      VALUE = (xx,yy,zz)                   */
/* 5) Where a group of attributes can be multiple, these are */
/*    represented inside a "Container" object, with the Container */
/*    and each group or individual object nested within indicating */
/*    the ordinal number of the container by using Class = n (where */
/*    n is the container ordinal number) as the first line */
/*    in the GROUP definition or the individual object definition. */

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/*      Objects within groups within the Container Object do not have */
/*      the Class = n line in their definition, as this is inherited */
/*      from the GROUP. */
/*      6) The Container object name is derived by concatenating the */
/*      string "Container" to the end of the Class Name, except */
/*      where the Class Name already has "Container" at its end. */
/*      7) The Data_Location for Container objects is set to NONE. This */
/*      is because the containers themselves are not classes or */
/*      attributes, but objects which just hold classes and */
/*      attributes which are related to one another. */
/*      8) In the COLLECTIONMETADATA group, all pointer attributes have */
/*      been excluded; viz., Browse, QualityTextComment, */
/*      ValidationDocument and UserCommentDocument. These values are */
/*      not known at the time that the ESDT is installed in a data */
/*      server, but must be associated with the ESDT later when the */
/*      browse, comments or documents are later inserted into the */
/*      data server. */
/*      9) In the INVENTORYMETADATA group, only those pointer attributes */
/*      that are set by the Science Software have been included; viz., */
/*      InputPointer, AncillaryInputPointer and OrbitParametersPointer */
/*      Only these pointers are known at the time that a data granule */
/*      produced by a PGE is installed in a data server, but must be */
/*      associated with the ESDT later when the browse, comments or */
/*      documents are inserted. */
/*      10) The <TYPE = > statement (without the brackets) appears only */
/*      for objects defined in the INVENTORYMETADATA group because */
/*      this group is used as the basis for generating the */
/*      INVENTORYMETADATA group in the Metadata Configuration File */
/*      (MCF) used by the SDP toolkit. The toolkit needs information */
/*      about the data type of the attribute, but the toolkit usage */
/*      may require a different type than is recorded in data server */
/*      tables (e.g., "float" to the data server, but "DOUBLE" to the */
/*      metadata tools in the SDP Toolkit.) */
/*      11) For each object description below where Mandatory = "TRUE" */
/*      has been set, the attribute value(s) that appear in an actual */
/*      Descriptor file will be checked during installation to the */
/*      data server against the established rule (if any) for that */
/*      attribute. The "Mandatory" that appears in this template is */
/*      associated with the checking of attribute values against */
/*      match rules (i.e. valids lists) and should not be confused */
/*      with the guidelines in DID 311 concerning which attributes */

```

```

/*      need to be supplied for various levels of metadata coverage. */
/*  12) Several attributes in the INVENTORYMETADATA group below have */
/*      Mandatory = "FALSE" set.  These attributes are not set by the */
/*      science software, but are set after the science software */
/*      finishes execution.  Setting Mandatory = "FALSE" for these */
/*      attributes is necessary in order to support proper SDP TK/MCF */
/*      functionality for these attributes. */
/*  13) In the INVENTORYMETADATA group below, only ShortName and */
/*      VersionID have Data_Location set to MCF.  This is because the */
/*      presence of a value field would not permit other values to be */
/*      set by a PGE and the data granule to be subsequently inserted */
/*      into the data server */
/*  14) The order of the elements in an object description is not */
/*      important. */
/*      */
/*      */
/* The Descriptor File Groups defined in this template are: */
/*      */
/*      METADATA      Collection-level Metadata attributes and values */
/*                   in the COLLECTIONMETADATA group, and the */
/*                   Granule-level Metadata attributes in the */
/*                   INVENTORYMETADATA group (which was formerly referred */
/*                   to as the GRANULEMETADATA group) */
/*      */
/*      SERVICE      Lists services available for the ESDT */
/*      */
/*      STRUCTURE    Describes the structure of the data granules */
/*                   that members of the ESDT */
/*      */
/*      EVENT        Events to be generated by actions which involve */
/*                   the ESDT, such as the Insert of a new data */
/*                   granule, update of metadata, etc. */
/*      */
/*      */
/* Other Notes: */
/*      */
/* a) Some of the classes in the B.0 Data Model are mutually */
/*     exclusive (e.g., RangeDateTime vs SingleDateTime), i.e., an */
/*     actual Descriptor file would employ one or the other but not */
/*     both. */
/* b) Not all classes in the data model apply to all collections. */

```

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/*      For example, the classes and attributes of the          */
/*      HorizontalCoordinateSystemContainer would not apply to  */
/*      scattered vertical profiles of trace gas concentrations (such */
/*      as those from SAGE III).                                  */
/*  c)   Some attributes may be repeated as necessary.  These are */
/*      indicated by NUM_VAL = n within the object description, where */
/*      n is the number of values provided (collection) or the maximum */
/*      number of values to be set (granule).                    */
/*  d)   Some groups of attributes may be repeated as necessary.  These */
/*      are indicated by Class = "M" within the attribute object */
/*      description, where M is the ordinal number of the Container. */
/*                                                                 */
/*                                                                 */
/*                                                                 */
GROUP = METADATA

      GROUP = COLLECTIONMETADATA
      GROUPTYPE = MASTERGROUP

/*                                                                 */
/* The "type" object is not used in science ESDTs, but is needed to */
/* identify the type for some system esdts.  */
      OBJECT = type
          Data_Location = "MCF"
          Mandatory = "TRUE"
          NUM_VAL = 1
          /* Substitute the actual type code to the right of "Value = " */
          Value = "string<30>"
      END_OBJECT = type

/* The DLL object is used to identify the specific DLL to be used with */
/* the ESDT */
      OBJECT = DLLName
          Data_Location = "MCF"
          Mandatory = "TRUE"
          NUM_VAL = 1
          /* Substitute the actual DLL Name to the right of "Value = " */
          Value = "string<80>"
      END_OBJECT = DLLName

```

```
/* The GranuleTimeDuration attribute is used to specify the maximum */
/* time coverage for a granule within this ESDT (in seconds). This */
/* attribute helps to improve granule temporal search performance. */
```

```
OBJECT = GranuleTimeDuration
  Data_Location = "MCF"
  Mandatory = "FALSE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* GranuleTimeDuration to the right of "Value = " */
  /* Do not use quotes around the actual value */
  Value = "integer<0..2147483647>"
END_OBJECT = GranuleTimeDuration
```

```
/* The SpatialSearchType attribute is used to identify the appropriate */
/* granule spatial search method. */
```

```
OBJECT = SpatialSearchType
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* SpatiaSearchType to the right of "Value = " */
  Value = "string<40>"
END_OBJECT = SpatialSearchType
```

```
/* The MimeTypes group is used to specify the MIME type values that need */
/* to be exported to ECHO by BMGT for the on-line science, exported */
/* browse, and on-line browse files. */
```

```
GROUP = MimeTypes
  OBJECT = ScienceMimeType
    Data_Location = "MCF"
    Mandatory = "FALSE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* ScienceMimeType to the right of "Value = " */
    Value = "string<50>"
  END_OBJECT = ScienceMimeType

  OBJECT = BrowseMimeType
```

```

    Data_Location = "MCF"
    Mandatory = "FALSE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* BrowseMimeType to the right of "Value = " */
    Value = "string<50>"
END_OBJECT = BrowseMimeType

```

```

OBJECT = BrowseOnlineMimeType
    Data_Location = "MCF"
    Mandatory = "FALSE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* BrowseOnlineMimeType to the right of "Value = " */
    Value = "string<50>"
    END_OBJECT = BrowseOnlineMimeType
END_GROUP = MimeTypes

```

```

/* The DataFileFormat is used to identify the format of the ESDT's data */
/* files down to the version level, when necessary. This information is */
/* used to allow or disallow the generation of HDF 4 file content maps. */

```

```

OBJECT = DataFileFormat
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* DataFileFormat to the right of "Value = " */
    Value = "string<55>"
    END_OBJECT = DataFileFormat

```

```

/* The DataModelType identifies the data model used for the metadata */
/* files. This is needed to distinguish the ISO 19115 data model */
/* metadata files from the ECS data model metadata files. This is an */
/* optional attribute. If absent, the ECS data model is assumed. */

```

```

OBJECT = DataModelType
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual DataModelType ("ISO-SMAP" or "ECS") */

```

```

        /* to the right of "Value = " */
        Value = "string<12>"
        END_OBJECT = DataModelType

/* The CollectionDataType attribute is used to identify           */
/* non-science-quality products such as NRT data.  If a collection does */
/* not contain this field, it will be assumed to be of science-quality. */

        OBJECT = CollectionDataType
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual CollectionDataType to the right of */
        /* "Value = ".  The current valid values are: */
        /* SCIENCE_QUALITY */
        /* NEAR_REAL_TIME */
        /* OTHER */
        Value = "string<20>"
        END_OBJECT = CollectionDataType

/*
/* The Collection-level attributes in this group follow as closely as */
/* possible to the B.0 Science Data Model as of 28 February 1997 with */
/* the following exceptions:
/*
/*
/* 1) The Document Modules has not been included since Documents are */
/*    handled by the Document Data Server (not the Science Data */
/*    Server)
/*
/* 2) Delivered Algorithm Package attributes (if any/if applicable) */
/*    are populated separately following successful Science Software */
/*    Integration and Test (SSI&T).  The ESDT, however, must be */
/*    installed on the Science Data Server before the Science Software */
/*    can be integrated with ECS and tested.
/*
/*
/* CollectionDescriptionClass*/
        GROUP = CollectionDescriptionClass
        OBJECT = ShortName
        Data_Location = "MCF"
        Mandatory = "TRUE"

```

```
    NUM_VAL = 1
    /* Substitute the actual */
    /* ShortName to the right of "Value = " */
    Value = "string<24>"
END_OBJECT = ShortName
```

```
OBJECT = LongName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* LongName to the right of "Value = " */
    Value = "string<1024>"
END_OBJECT = LongName
```

```
OBJECT = CollectionDescription
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* CollectionDescription to the right of "Value = " */
    Value = "string<4000>"
END_OBJECT = CollectionDescription
```

```
OBJECT = VersionID
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* VersionID to the right of "Value = " */
    /* Do not use quotes around the actual value */
    Value = "integer<0..255>"
END_OBJECT = VersionID
END_GROUP = CollectionDescriptionClass
```

```
/* ECSCollection*/
GROUP = ECSCollection
    OBJECT = RevisionDate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
```

```
        /* Substitute the actual */
        /* RevisionDate to the right of "Value = " */
        Value = "date"
END_OBJECT = RevisionDate

OBJECT = SuggestedUsage
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* SuggestedUsage to the right of "Value = " */
    Value = "string<500>"
END_OBJECT = SuggestedUsage

OBJECT = ProcessingCenter
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* ProcessingCenter to the right of "Value = " */
    Value = "string<80>"
END_OBJECT = ProcessingCenter

OBJECT = ArchiveCenter
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* ArchiveCenter to the right of "Value = " */
    Value = "string<80>"
END_OBJECT = ArchiveCenter

OBJECT = VersionDescription
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* VersionDescription to the right of "Value = " */
    Value = "string<4000>"
END_OBJECT = VersionDescription
```

```
/* The following five attributes are used to provide science users */
/* additional information about the data set in the form of external */
/* guide and miscellaneous documents. */
```

```
/* The DatasetDisclaimerPointer attribute is used to present a */
/* disclaimer about the data set that the user must acknowledge before */
/* the data can be ordered. */
```

```
OBJECT = DatasetDisclaimerPointer
  Data_Location = "MCF"
  Mandatory = "FALSE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* DatasetDisclaimerPointer to the right of "Value = " */
  Value = "string<200>"
END_OBJECT = DatasetDisclaimerPointer
```

```
/* ECSCollectionGuide */
GROUP = ECSCollectionGuide
```

```
/* The ECSCollectionGuidePointer attribute is used to provide the URL */
/* of the user's guide document that describes the data set. */
```

```
OBJECT = ECSCollectionGuidePointer
  Data_Location = "MCF"
  Mandatory = "FALSE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* ECSCollectionGuidePointer to the right of "Value = " */
  Value = "string<200>"
END_OBJECT = ECSCollectionGuidePointer
```

```
/* The ECSCollectionGuidePointerComment is used to provide the */
/* hypertext link displayed on the client for the */
/* ECSCollectionGuidePointer. */
```

```
OBJECT = ECSCollectionGuidePointerComment
  Data_Location = "MCF"
  Mandatory = "FALSE"
  NUM_VAL = 1
  /* Substitute the actual */
```

```

        /* ECSCollectionGuidePointerComment to the right of "Value = " */
        Value = "string<255>"
        END_OBJECT = ECSCollectionGuidePointerComment
    END_GROUP = ECSCollectionGuide

/* MiscellaneousInformation */
    GROUP = MiscellaneousInformation

/* The MiscellaneousInformationPointer attribute is used to provide the */
/* URL of a document which contains additional information about the */
/* data set that is not in the guide document. */

        OBJECT = MiscellaneousInformationPointer
        Data_Location = "MCF"
        Mandatory = "FALSE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* MiscellaneousInformationPointer to the right of "Value = " */
        Value = "string<200>"
        END_OBJECT = MiscellaneousInformationPointer

/* The MiscellaneousInformationPointerComment is used to provide the */
/* hypertext link displayed on the client for the */
/* MiscellaneousInformationPointer. */

        OBJECT = MiscellaneousInformationPointerComment
        Data_Location = "MCF"
        Mandatory = "FALSE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* MiscellaneousInformationPointerComment to the right of "Value = " */
        Value = "string<255>"
        END_OBJECT = MiscellaneousInformationPointerComment
    END_GROUP = MiscellaneousInformation
END_GROUP = ECSCollection

/* SingleTypeCollection*/
    GROUP = SingleTypeCollection
        OBJECT = CitationforExternalPublication
        Data_Location = "MCF"
        Mandatory = "TRUE"

```

```
NUM_VAL = 1
/* Substitute the actual */
/* CitationforExternalPublication to the right of "Value = " */
Value = "string<500>"
END_OBJECT = CitationforExternalPublication
```

```
OBJECT = CollectionState
Data_Location = "MCF"
Mandatory = "TRUE"
NUM_VAL = 1
/* Substitute the actual CollectionState to the right of "Value = " */
Value = "string<10>"
END_OBJECT = CollectionState
```

```
OBJECT = MaintenanceandUpdateFrequency
Data_Location = "MCF"
Mandatory = "TRUE"
NUM_VAL = 1
/* Substitute the actual */
/* MaintenanceandUpdateFrequency to the right of "Value = " */
Value = "string<80>"
END_OBJECT = MaintenanceandUpdateFrequency
```

```
OBJECT = AccessConstraints
Data_Location = "MCF"
Mandatory = "TRUE"
NUM_VAL = 1
/* Substitute the actual */
/* AccessConstraints to the right of "Value = " */
Value = "string<255>"
END_OBJECT = AccessConstraints
END_GROUP = SingleTypeCollection
```

```
/* Spatial*/
GROUP = Spatial
OBJECT = SpatialCoverageType
Data_Location = "MCF"
Mandatory = "TRUE"
NUM_VAL = 1
/* Substitute the actual */
/* SpatialCoverageType to the right of "Value = " */
```

```
        Value = "string<10>"
        END_OBJECT = SpatialCoverageType

/* SpatialDomainContainer*/
    GROUP = SpatialDomainContainer
    GROUP = VerticalSpatialDomain
    OBJECT = VerticalSpatialDomainContainer

        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

    OBJECT = VerticalSpatialDomainType
        Data_Location = "MCF"
        Mandatory = "TRUE"
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual */
        /* VerticalSpatialDomainType to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = VerticalSpatialDomainType

    OBJECT = VerticalSpatialDomainValue
        Data_Location = "MCF"
        Mandatory = "TRUE"
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual */
        /* VerticalSpatialDomainValue to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = VerticalSpatialDomainValue
    END_OBJECT = VerticalSpatialDomainContainer
    END_GROUP = VerticalSpatialDomain

    GROUP = HorizontalSpatialDomainContainer

/* ZoneIdentifierClass*/
    GROUP = ZoneIdentifierClass
    OBJECT = ZoneIdentifier
        Data_Location = "MCF"
        Mandatory = "TRUE"
```

```

        NUM_VAL = 1
        /* Substitute the actual */
        /* ZoneIdentifier to the right of "Value = " */
        Value = "string<64>"
        END_OBJECT = ZoneIdentifier
    END_GROUP = ZoneIdentifierClass

/* Note: One (and only one) of the following types of attribute */
/* classes must be present in an ESDT Descriptor:                */
/*                                                                */
/* GPolygonContainer or BoundingRectangle or Point or Circle    */
/*                                                                */

/* GPolygonContainer*/
    GROUP = GPolygon
        OBJECT = GPolygonContainer

        /* A separate container must be used for each set      */
        /* of attribute values. Replace M with the ordinal      */
        /* number of the GPolygonContainer.                      */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

    GROUP = GRing

        /* Substitute ordinal number of the */
        /* GPolygonContainer for M */
        Class = "M"

        OBJECT = ExclusionGRingFlag
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual */
            /* ExclusionGRingFlag to the right of "Value = " */
            Value = "string<1>"
        END_OBJECT = ExclusionGRingFlag

    END_GROUP = GRing

```

```

/* A GPolygon must consist of at least 3 points! */
GROUP = GRingPoint

/* Substitute ordinal number of the */
/* GPolygonContainer for M */
Class = "M"

OBJECT = GRingPointLatitude
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute the actual number of */
  /* GRingPointLatitude values for n */
  NUM_VAL = n
  /* Substitute the actual */
  /* GRingPointLatitude values to the right of the = */
  /* The value range is -90.0 to 90.0 */
  /* Do not use quotes around the actual values */
  Value = ("real", "real", "real")
END_OBJECT = GRingPointLatitude

OBJECT = GRingPointLongitude
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute the actual number of */
  /* GRingPointLongitude values for n */
  NUM_VAL = n
  /* Substitute the actual */
  /* GRingPointLongitude values to the right of the = */
  /* The value range is -180.0 to 180.0 */
  /* Do not use quotes around the actual values */
  Value = ("real", "real", "real")
END_OBJECT = GRingPointLongitude

OBJECT = GRingPointSequenceNo
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute the actual number of */
  /* GRingPointSequenceNo for n */
  NUM_VAL = n
  /* Substitute n GRingPointSequenceNo values to the right of the = */
  /* Do not use quotes around the actual values */

```

```
        Value = ("integer<>", "integer<>", "integer<>")
    END_OBJECT = GRingPointSequenceNo

    END_GROUP = GRingPoint

    END_OBJECT = GPolygonContainer
    END_GROUP = GPolygon

/* BoundingRectangle*/
    GROUP = BoundingRectangle
    OBJECT = WestBoundingCoordinate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* WestBoundingCoordinate to the right of "Value = " */
        /* The value range is -180.0 to 180.0 */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = WestBoundingCoordinate

    OBJECT = NorthBoundingCoordinate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* NorthBoundingCoordinate to the right of "Value = " */
        /* The value range is -90.0 to 90.0 */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = NorthBoundingCoordinate

    OBJECT = EastBoundingCoordinate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* EastBoundingCoordinate to the right of "Value = " */
        /* The value range is -180.0 to 180.0 */
        /* Do not use quotes around the actual value */
        Value = "real"
```

```
END_OBJECT = EastBoundingCoordinate

OBJECT = SouthBoundingCoordinate
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* SouthBoundingCoordinate to the right of "Value = " */
  /* The value range is -90.0 to 90.0 */
  /* Do not use quotes around the actual value */
  Value = "real"
END_OBJECT = SouthBoundingCoordinate
END_GROUP = BoundingRectangle
```

```
/* Point*/
```

```
GROUP = Point
  OBJECT = PointLatitude
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* PointLatitude to the right of "Value = " */
    /* The value range is -90.0 to 90.0 */
    /* Do not use quotes around the actual value */
    Value = "real"
  END_OBJECT = PointLatitude

  OBJECT = PointLongitude
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* PointLongitude to the right of "Value = " */
    /* The value range is -180.0 to 180.0 */
    /* Do not use quotes around the actual value */
    Value = "real"
  END_OBJECT = PointLongitude
END_GROUP = Point
```

```
/* Circle*/
```

```
GROUP = Circle
```

```
OBJECT = CenterLatitude
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* CenterLatitude to the right of "Value = " */
  /* The value range is -90.0 to 90.0 */
  /* Do not use quotes around the actual value */
  Value = "real"
END_OBJECT = CenterLatitude

OBJECT = CenterLongitude
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* CenterLongitude to the right of "Value = " */
  /* The value range is -180.0 to 180.0 */
  /* Do not use quotes around the actual value */
  Value = "real"
END_OBJECT = CenterLongitude

OBJECT = RadiusValue
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* RadiusValue to the right of "Value = " */
  /* Do not use quotes around the actual value */
  Value = "real"
END_OBJECT = RadiusValue

OBJECT = RadiusUnits
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual */
  /* RadiusUnits to the right of "Value = " */
  Value = "string<10>"
END_OBJECT = RadiusUnits
END_GROUP = Circle
```

```

        END_GROUP = HorizontalSpatialDomainContainer
        END_GROUP = SpatialDomainContainer

/* CoordinateSystemContainer*/
/* Note: VerticalCoordinateSystemContainer and */
/* HorizontalCoordinateSystemContainer are not, strictly speaking, */
/* container objects of multiple sets of values. These two */
/* attributes have 'Container' in their names due to a naming */
/* anomaly in the BNF and Data Model. */

        GROUP = CoordinateSystemContainer
        GROUP = VerticalCoordinateSystemContainer

/* AltitudeSystemDefinition*/
        GROUP = AltitudeSystemDefinition

                OBJECT = AltitudeDatumName
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute the actual */
                /* AltitudeDatumName to the right of "Value = " */
                Value = "string<40>"
        END_OBJECT = AltitudeDatumName

                OBJECT = AltitudeDistanceUnits
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute the actual */
                /* AltitudeDistanceUnits to the right of "Value = " */
                Value = "string<20>"
        END_OBJECT = AltitudeDistanceUnits

                OBJECT = AltitudeEncodingMethod
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute the actual */
                /* AltitudeEncodingMethod to the right of "Value = " */

```

```
        Value = "string<255>"
    END_OBJECT = AltitudeEncodingMethod

/* AltitudeResolutionClass */
OBJECT = AltitudeResolution
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* AltitudeResolution to the right of "Value = " */
    /* Do not use quotes around the actual value */
    Value = "real"
END_OBJECT = AltitudeResolution

END_GROUP = AltitudeSystemDefinition

/* DepthSystemDefinition*/
GROUP = DepthSystemDefinition

    OBJECT = DepthDatumName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* DepthDatumName to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = DepthDatumName

    OBJECT = DepthDistanceUnits
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual DepthDistanceUnits to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = DepthDistanceUnits

    OBJECT = DepthEncodingMethod
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual DepthEncodingMethod to the right of "Value = " */
```

```
        Value = "string<255>"
    END_OBJECT = DepthEncodingMethod

    /* DepthResolutionClass */
    OBJECT = DepthResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual DepthResolution to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = DepthResolution

    END_GROUP = DepthSystemDefinition

    END_GROUP = VerticalCoordinateSystemContainer

    GROUP = HorizontalCoordinateSystemContainer

/* GeodeticModel*/
    GROUP = GeodeticModel

        OBJECT = HorizontalDatumName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual HorizontalDatumName to the right of "Value = " */
            Value = "string<30>"
        END_OBJECT = HorizontalDatumName

        OBJECT = EllipsoidName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual EllipsoidName to the right of "Value = " */
            Value = "string<255>"
        END_OBJECT = EllipsoidName

        OBJECT = SemiMajorAxis
            Data_Location = "MCF"
            Mandatory = "TRUE"
```

```

        NUM_VAL = 1
        /* Substitute the actual SemiMajorAxis to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = SemiMajorAxis

    OBJECT = DenominatorofFlatteningRatio
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual DenominatorofFlatteningRatio to the right of "Value =
" */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = DenominatorofFlatteningRatio

    END_GROUP = GeodeticModel

/* Note: One (and only one) of the following types of attribute */
/* classes must be present in an ESDT Descriptor: */
/* */
/* GeographicCoordinateSystems or */
/* PlanarCoordinateCoordinateSystem or LocalCoordinateSystem */
/* */

/* GeographicCoordinateSystem*/
    GROUP = GeographicCoordinateSystem

        OBJECT = LatitudeResolution
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual LatitudeResolution to the right of "Value = " */
            /* Do not use quotes around the actual value */
            Value = "real"
        END_OBJECT = LatitudeResolution

        OBJECT = LongitudeResolution
            Data_Location = "MCF"
            Mandatory = "TRUE"

```

```

        NUM_VAL = 1
        /* Substitute the actual LongitudeResolution to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = LongitudeResolution

    OBJECT = GeographicCoordinateUnits
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual GeographicCoordinateUnits to the right of "Value = "
*/
        Value = "string<80>"
    END_OBJECT = GeographicCoordinateUnits

    END_GROUP = GeographicCoordinateSystem

/* PlanarCoordinateSystems */

    GROUP = PlanarCoordinateSystems
        GROUP = PlanarCoordinateSystem
            OBJECT = PlanarCoordinateSystemContainer

                Data_Location = "NONE"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* PlanarCoordinateSystemContainer for M */
                Class = "M"

/* PlanarCoordinateInformation*/

        GROUP = PlanarCoordinateInformation

            /* Substitute ordinal number of the */
            /* PlanarCoordinateSystemContainer for M */
            Class = "M"

            OBJECT = PlanarDistanceUnits
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1

```

```
        /* Substitute the actual PlanarDistanceUnits */
        /* value to the right of "Value = " */
        Value = "string<80>"
END_OBJECT = PlanarDistanceUnits

OBJECT = PlanarCoordinateEncodingMethod
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual */
    /* PlanarCoordinateEncodingMethod to the right of "Value = " */
    Value = "string<80>"
END_OBJECT = PlanarCoordinateEncodingMethod

/* One of either DistanceandBearingRepresentation or*/
/* CoordinateRepresentation must be present in a */
/* Descriptor File, but not more than one! */

GROUP = DistanceandBearingRepresentation

    OBJECT = DistanceResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* DistanceResolution value to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = DistanceResolution

    OBJECT = BearingResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual BearingResolution */
        /* value to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = BearingResolution

OBJECT = BearingUnits
```

```
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual BearingUnits */
        /* value to the right of "Value = " */
        Value = "string<255>"
    END_OBJECT = BearingUnits

OBJECT = BearingReferenceDirection
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* BearingReferenceDirection to the right of "Value = " */
    Value = "string<20>"
END_OBJECT = BearingReferenceDirection

OBJECT = BearingReferenceMeridian
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* BearingReferenceMeridian to the right of "Value = " */
    Value = "string<255>"
END_OBJECT = BearingReferenceMeridian

END_GROUP = DistanceandBearingRepresentation

GROUP = CoordinateRepresentation

    OBJECT = AbscissaResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* AbscissaResolution to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = AbscissaResolution

    OBJECT = OrdinateResolution
```

```

        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* OrdinateResolution to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = OrdinateResolution

    END_GROUP = CoordinateRepresentation

    END_GROUP = PlanarCoordinateInformation

/* One of either MapProjection or                               */
/* LocalPlanarCoordinateSystem or GridCoordinateSystem */
/* must be present in a Descriptor File, but not more */
/* than one! */
/* MapProjection*/

GROUP = MapProjection

    /* Substitute ordinal number of the */
    /* PlanarCoordinateSystemContainer for M */
    Class = "M"

    OBJECT = MapProjectionName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* MapProjectionName to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = MapProjectionName

    OBJECT = MapProjectionPointer
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of */

```

```

        /* MapProjectionPointer to the right of "Value = " */
        Value = "string<255>"
        END_OBJECT = MapProjectionPointer
    END_GROUP = MapProjection

/* LocalPlanarCoordinateSystem*/

GROUP = LocalPlanarCoordinateSystem

    /* Substitute ordinal number of the      */
    /* PlanarCoordinateSystemContainer for M */
    Class = "M"

    OBJECT = LocalPlanarCoordinateSystemDescription
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of      */
        /* LocalPlanarCoordinateSystemDescription to the right of "Value = " */
        Value = "string<255>"
    END_OBJECT = LocalPlanarCoordinateSystemDescription

    OBJECT = LocalPlanarGeoreferenceInformation
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of      */
        /* LocalPlanarGeoreferenceInformation to the right of "Value = " */
        Value = "string<255>"
    END_OBJECT = LocalPlanarGeoreferenceInformation
    END_GROUP = LocalPlanarCoordinateSystem

/* GridCoordinateSystem*/

GROUP = GridCoordinateSystem

    /* Substitute ordinal number of the      */
    /* PlanarCoordinateSystemContainer for M */
    Class = "M"

```

```
        OBJECT = GridCoordinateSystemName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual value of */
            /* GridCoordinateSystemName to the right of "Value = " */
            Value = "string<255>"
        END_OBJECT = GridCoordinateSystemName

    END_GROUP = GridCoordinateSystem

    END_OBJECT = PlanarCoordinateSystemContainer
    END_GROUP = PlanarCoordinateSystem

    END_GROUP = PlanarCoordinateSystems

/* LocalCoordinateSystem*/

    GROUP = LocalCoordinateSystem

        OBJECT = LocalCoordinateSystemDescription
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual value of */
            /* LocalCoordinateSystemDescription to the right of "Value = " */
            Value = "string<255>"
        END_OBJECT = LocalCoordinateSystemDescription

        OBJECT = LocalGeoreferenceInformation
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual value of */
            /* LocalGeoreferenceInformation to the right of "Value = " */
            Value = "string<255>"
        END_OBJECT = LocalGeoreferenceInformation

    END_GROUP = LocalCoordinateSystem

    END_GROUP = HorizontalCoordinateSystemContainer
```

```
END_GROUP = CoordinateSystemContainer
```

```
END_GROUP = Spatial
```

```
/* Temporal*/
```

```
GROUP = Temporal
```

```
OBJECT = TimeType
```

```
  Data_Location = "MCF"
```

```
  Mandatory = "TRUE"
```

```
  NUM_VAL = 1
```

```
  /* Substitute the actual TimeType to the right of "Value = " */
```

```
  Value = "string<10>"
```

```
END_OBJECT = TimeType
```

```
OBJECT = DateType
```

```
  Data_Location = "MCF"
```

```
  Mandatory = "TRUE"
```

```
  NUM_VAL = 1
```

```
  /* Substitute the actual DateType to the right of "Value = " */
```

```
  Value = "string<10>"
```

```
END_OBJECT = DateType
```

```
OBJECT = TemporalRangeType
```

```
  Data_Location = "MCF"
```

```
  Mandatory = "TRUE"
```

```
  NUM_VAL = 1
```

```
  /* Substitute the actual TemporalRangeType to the right of "Value = " */
```

```
  Value = "string<30>"
```

```
END_OBJECT = TemporalRangeType
```

```
OBJECT = PrecisionofSeconds
```

```
  Data_Location = "MCF"
```

```
  Mandatory = "TRUE"
```

```
  NUM_VAL = 1
```

```
  /* Substitute the actual PrecisionofSeconds to the right of "Value = " */
```

```
  /* Do not use quotes around the actual value */
```

```
  Value = "integer<>"
```

```
END_OBJECT = PrecisionofSeconds
```

```
OBJECT = EndsatPresentFlag
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual EndsatPresentFlag to the right of "Value = " */
  Value = "string<1>"
END_OBJECT = EndsatPresentFlag
```

```
/* RegularPeriodic*/
```

```
GROUP = RegularPeriodic
  OBJECT = RegularPeriodicContainer
```

```
  /* A separate container must be used for each set */
  /* of attribute values. Replace M with the ordinal */
  /* number of the RegularPeriodicContainer. */
  Data_Location = "NONE"
  Mandatory = "TRUE"
  Class = "M"
```

```
  OBJECT = PeriodName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* RegularPeriodicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual PeriodName to the right of "Value = " */
    Value = "string<30>"
  END_OBJECT = PeriodName
```

```
  /* Format of Period1stDate is YYYY-MM-DD or YYYY-DDD */
```

```
  OBJECT = Period1stDate
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* RegularPeriodicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual Period1stDate to the right of "Value = " */
```

```
Value = "date"
END_OBJECT = Period1stDate

/* Format of Period1stTime is HH:MM:SS.SSSS... */
OBJECT = Period1stTime
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* RegularPeriodicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual Period1stTime to the right of "Value = " */
Value = "time"
END_OBJECT = Period1stTime

OBJECT = PeriodCycleDurationUnit
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* RegularPeriodicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual PeriodCycleDurationUnit to the right of "Value = " */
Value = "string<15>"
END_OBJECT = PeriodCycleDurationUnit

OBJECT = PeriodCycleDurationValue
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* RegularPeriodicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual PeriodCycleDurationValue to the right of "Value = " */
/* Do not use quotes around the actual value */
Value = "real"
END_OBJECT = PeriodCycleDurationValue

OBJECT = PeriodDurationUnit
Data_Location = "MCF"
Mandatory = "TRUE"
```

```

        /* Substitute ordinal number of the */
        /* RegularPeriodicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual PeriodDurationUnit to the right of "Value = " */
        Value = "string<15>"
    END_OBJECT = PeriodDurationUnit

    OBJECT = PeriodDurationValue
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* RegularPeriodicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual PeriodDurationValue to the right of "Value = " */
        /* Do not use quotes around the actual value */
        Value = "real"
    END_OBJECT = PeriodDurationValue
    END_OBJECT = RegularPeriodicContainer
    END_GROUP = RegularPeriodic

/* MultipleDateTimePeriod*/

    GROUP = MultipleDateTimePeriod
        OBJECT = MultipleDateTimePeriodContainer

        /* A separate container must be used for each set */
        /* of attribute values. Replace M with the ordinal */
        /* number of the container. */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = MultipleDateName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* MultipleDateTimePeriodContainer for M */
            Class = "M"
            NUM_VAL = 1

```

```

    /* Substitute the actual MultipleDateName to the right of "Value = " */
    Value = "string<30>"
END_OBJECT = MultipleDateName

GROUP = SingleDateTimes

    /* NOTE: There must be a minimum of two */
    /*       SingleDateTimesContainers      */

    /* Substitute ordinal number of the */
    /* MultipleDateTimePeriodContainer for M */
    Class = "M"

OBJECT = SingleDateTimesContainer

    /* A separate container must be used for each set */
    /* of attribute values. Replace M with the ordinal */
    /* number of the container.                        */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    /* Format of TimeofDay is HH:MM:SS.SSSS... */
    OBJECT = TimeofDay
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* SingleDateTimesContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual TimeofDay to the right of "Value = " */
        Value = "time"
    END_OBJECT = TimeofDay

    /* Format of CalendarDate is YYYY-MM-DD or YYYY-DDD */
    OBJECT = CalendarDate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* SingleDateTimesContainer for M */
        Class = "M"

```

```

        NUM_VAL = 1
        /* Substitute the actual CalendarDate to the right of "Value = " */
        Value = "date"
        END_OBJECT = CalendarDate
        END_OBJECT = SingleDateTimesContainer
    END_GROUP = SingleDateTimes

    END_OBJECT = MultipleDateTimePeriodContainer
END_GROUP = MultipleDateTimePeriod

/* One of either SingleDateTime or RangeDateTime must be */
/* present in an ESDT Descriptor File, but not both!      */

/* SingleDateTime*/

GROUP = SingleDateTime
/* Format of RangeBeginningTime is HH:MM:SS.SSSS... */
OBJECT = TimeOfDay
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual TimeOfDay to the right of "Value = " */
    Value = "time"
    END_OBJECT = TimeOfDay

/* Format of CalendarDate is YYYY-MM-DD or YYYY-DDD */
OBJECT = CalendarDate
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual CalendarDate to the right of "Value = " */
    Value = "date"
    END_OBJECT = CalendarDate
END_GROUP = SingleDateTime

/* RangeDateTime*/

GROUP = RangeDateTime
/* Format of RangeEndingDate is YYYY-MM-DD or YYYY-DDD */
OBJECT = RangeBeginningDate

```

```
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual RangeBeginningDate to the right of "Value = " */
        Value = "date"
    END_OBJECT = RangeBeginningDate

/* Format of RangeBeginningTime is HH:MM:SS.SSSS... */
    OBJECT = RangeBeginningTime
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual RangeBeginningTime to the right of "Value = " */
        Value = "time"
    END_OBJECT = RangeBeginningTime

/* Format of RangeEndingDate is YYYY-MM-DD or YYYY-DDD */
    OBJECT = RangeEndingDate
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual RangeEndingDate to the right of "Value = " */
        Value = "date"
    END_OBJECT = RangeEndingDate

/* Format of RangeEndingTime is HH:MM:SS.SSSS... */
    OBJECT = RangeEndingTime
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual RangeEndingTime to the right of "Value = " */
        Value = "time"
    END_OBJECT = RangeEndingTime
    END_GROUP = RangeDateTime

    END_GROUP = Temporal

/* Contact */
/* The implementation of this in the B.0 template descriptor file */
/* is to say that an ESDT descriptor file may contain multiple */
/* Contacts, each of which may be either ContactPerson or */
```

```

/* ContactOrganization. For example, if three Contacts are to be */
/* used for a given descriptor file, two may be of the */
/* ContactPerson Class and one of the ContactOrganization Class. */
/* The Contact ODL below represents the necessary ODL format if */
/* one or more ContactPerson container is used and if one or more */
/* ContactAddress container is used. The compound attribute */
/* definitions of ContactPerson and ContactOrgranization are as */
/* follows: */
/* */

```

```
GROUP = Contact
```

```
GROUP = ContactPerson
OBJECT = ContactPersonContainer
```

```

/* A separate container must be used for each set */
/* of attribute values. Replace M with the ordinal */
/* number of the ContactPersonContainer. */
Data_Location = "NONE"
Mandatory = "TRUE"
Class = "M"

```

```

OBJECT = Role
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual Role to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = Role

```

```

OBJECT = HoursofService
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual HoursofService to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = HoursofService

```

```
OBJECT = ContactInstructions
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ContactInstructions to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = ContactInstructions

OBJECT = ContactJobPosition
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ContactJobPosition to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = ContactJobPosition

OBJECT = ContactFirstName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ContactFirstName to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = ContactFirstName

OBJECT = ContactMiddleName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ContactMiddleName to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = ContactMiddleName
```

```
OBJECT = ContactLastName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ContactLastName to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = ContactLastName

/* ContactPersonAddress */
GROUP = ContactPersonAddress

  /* Substitute ordinal number of the ContactPersonContainer for M */
  Class = "M"

OBJECT = ContactPersonAddressContainer

  /* A separate container must be used for each set */
  /* of attribute values. Replace M with the ordinal */
  /* number of the ContactPersonAddressContainer. */
  Data_Location = "NONE"
  Mandatory = "TRUE"
  Class = "M"

OBJECT = StreetAddress
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* ContactPersonAddressContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual StreetAddress to the right of "Value = " */
  Value = "string<1024>"
END_OBJECT = StreetAddress

OBJECT = City
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* ContactPersonAddressContainer for M */
```

```
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual City to the right of "Value = " */
        Value = "string<30>"
    END_OBJECT = City

OBJECT = StateProvince
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual StateProvince to the right of "Value = " */
    Value = "string<30>"
    END_OBJECT = StateProvince

OBJECT = PostalCode
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual PostalCode to the right of "Value = " */
    Value = "string<20>"
    END_OBJECT = PostalCode

OBJECT = Country
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual Country to the right of "Value = " */
    Value = "string<10>"
    END_OBJECT = Country

    END_OBJECT = ContactPersonAddressContainer
END_GROUP = ContactPersonAddress
```

```
/* Telephone */
GROUP = Telephone

/* Substitute ordinal number of the */
/* ContactPersonContainer for M */
Class = "M"

OBJECT = TelephoneContainer

/* A separate container must be used for each set */
/* of attribute values. Replace M with the ordinal */
/* number of the TelephoneContainer. */
Data_Location = "NONE"
Mandatory = "TRUE"
Class = "M"

OBJECT = TelephoneNumber
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* TelephoneContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual TelephoneNumber to the right of "Value = " */
Value = "string<23>"
END_OBJECT = TelephoneNumber

OBJECT = TelephoneNumberType
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* TelephoneContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual TelephoneNumberType to the right of "Value = " */
Value = "string<10>"
END_OBJECT = TelephoneNumberType
END_OBJECT = TelephoneContainer

END_GROUP = Telephone
```

```

/* Email */
GROUP = Email

    /* Substitute ordinal number of the */
    /* ContactPersonContainer for M */
    Class = "M"

    OBJECT = ElectronicMailAddress
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute the actual number of */
        /* ElectronicMailAddresses for n */
        NUM_VAL = n
        /* Substitute n ElectronicMailAddresses values to the right of the = */
        Value = ("string<255>", "string<255>")
    END_OBJECT = ElectronicMailAddress

    END_GROUP = Email

    END_OBJECT = ContactPersonContainer
    END_GROUP = ContactPerson

GROUP = ContactOrganization
    OBJECT = ContactOrganizationContainer

    /* A separate container must be used for each set */
    /* of attribute values. Replace M with the ordinal */
    /* number of the ContactOrganizationContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = Role
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual Role to the right of "Value = " */

```

```
Value = "string<20>"
END_OBJECT = Role

OBJECT = HoursofService
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* ContactOrganizationContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual HoursofService to the right of "Value = " */
Value = "string<255>"
END_OBJECT = HoursofService

OBJECT = ContactInstructions
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* ContactOrganizationContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual ContactInstructions to the right of "Value = " */
Value = "string<255>"
END_OBJECT = ContactInstructions

OBJECT = ContactOrganizationName
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* ContactOrganizationContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual ContactOrganizationName to the right of "Value = " */
Value = "string<255>"
END_OBJECT = ContactOrganizationName

/* ContactOrganizationAddress */
GROUP = ContactOrganizationAddress

/* Substitute ordinal number of the */
/* ContactOrganizationContainer for M */
```

```
Class = "M"

OBJECT = ContactOrganizationAddressContainer

    /* A separate container must be used for each set of */
    /* attribute values. Replace M with the ordinal */
    /* number of the ContactOrganizationAddressContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

OBJECT = StreetAddress
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual StreetAddress to the right of "Value = " */
    Value = "string<1024>"
END_OBJECT = StreetAddress

OBJECT = City
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual City to the right of "Value = " */
    Value = "string<30>"
END_OBJECT = City

OBJECT = StateProvince
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual StateProvince to the right of "Value = " */
```

```
        Value = "string<30>"
    END_OBJECT = StateProvince

    OBJECT = PostalCode
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationAddressContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual PostalCode to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = PostalCode

    OBJECT = Country
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationAddressContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual Country to the right of "Value = " */
        Value = "string<10>"
    END_OBJECT = Country

    END_OBJECT = ContactOrganizationAddressContainer
END_GROUP = ContactOrganizationAddress

/* OrganizationTelephone */
GROUP = OrganizationTelephone

    /* Substitute ordinal number of the */
    /* ContactOrganizationContainer for M */
    Class = "M"

    OBJECT = OrganizationTelephoneContainer

        /* A separate container must be used for each set */
        /* of attribute values. Replace M with the ordinal */
        /* number of the OrganizationTelephoneContainer. */
        Data_Location = "NONE"
```

```
Mandatory = "TRUE"
Class = "M"

OBJECT = TelephoneNumber
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* OrganizationTelephoneContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual TelephoneNumber to the right of "Value = " */
  Value = "string<23>"
END_OBJECT = TelephoneNumber

OBJECT = TelephoneNumberType
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* OrganizationTelephoneContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual TelephoneNumberType to the right of "Value = " */
  Value = "string<10>"
END_OBJECT = TelephoneNumberType

END_OBJECT = OrganizationTelephoneContainer

END_GROUP = OrganizationTelephone

/* OrganizationEmail */
GROUP = OrganizationEmail

  /* Substitute ordinal number of the */
  /* ContactOrganizationContainer for M */
  Class = "M"

OBJECT = ElectronicMailAddress
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute the actual number of */
  /* ElectronicMailAddresses for n */
```

```

        NUM_VAL = n
        /* Substitute n ElectronicMailAddresses values to the right of the = */
        Value = ("string<255>", "string<255>")
        END_OBJECT = ElectronicMailAddress

    END_GROUP = OrganizationEmail

    END_OBJECT = ContactOrganizationContainer
    END_GROUP = ContactOrganization

    END_GROUP = Contact

/* Note: The ODL implementation of the DisciplineTopicParameters    */
/* class does not contain all the associations among its attributes */
/* that are implicit in the Data Model, due to the limitations of ODL*/
    GROUP = DisciplineTopicParameters
    OBJECT = DisciplineTopicParametersContainer

    /* A separate container must be used for each set    */
    /* of attribute values. Replace M with the ordinal    */
    /* number of the DisciplineTopicParametersContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = ECSDisciplineKeyword
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the container for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual ECSDisciplineKeyword to the right of "Value = " */
    Value = "string<80>"
    END_OBJECT = ECSDisciplineKeyword

    OBJECT = ECSTopicKeyword
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the container for M */
    Class = "M"
    NUM_VAL = 1

```

```

        /* Substitute the actual ECSTopicKeyword to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = ECSTopicKeyword

    OBJECT = ECSTermKeyword
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the container for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual ECSTermKeyword to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = ECSTermKeyword

    OBJECT = ECSVariableKeyword
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the container for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual ECSVariableKeyword to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = ECSVariableKeyword

/* ECSPParameter*/

    GROUP = ECSPParameter

        /* Substitute ordinal number of the */
        /* DisciplineTopicParametersContainer for M */
        Class = "M"

        OBJECT = ECSPParameterKeyword
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute the actual number of */
            /* ECSPParameterKeywords for n */
            NUM_VAL = n
            /* Substitute n ECSPParameterKeyword values to the right of the = */
            Value = ("string<80>", "string<80>")
        END_OBJECT = ECSPParameterKeyword

```

```

        END_GROUP = ECSPParameter

        END_OBJECT = DisciplineTopicParametersContainer
        END_GROUP = DisciplineTopicParameters

/* TemporalKeywordClass */
GROUP      = TemporalKeywordClass
OBJECT     = TemporalKeyword
    Data_Location = "MCF"
    Mandatory     = "TRUE"
    /* Substitute the actual number of TemporalKeywords for n */
    NUM_VAL       = n
    /* Substitute n TemporalKeyword values to the right of the = */
    Value         = ("string<40>", "string<40>")
    END_OBJECT    = TemporalKeyword
    END_GROUP     = TemporalKeywordClass

/* SpatialKeywordClass */
GROUP      = SpatialKeywordClass
OBJECT     = SpatialKeyword
    Data_Location = "MCF"
    Mandatory     = "TRUE"
    /* Substitute the actual number of SpatialKeywords for n */
    NUM_VAL       = n
    /* Substitute n SpatialKeyword values to the right of the = */
    Value         = ("string<40>", "string<40>")
    END_OBJECT    = SpatialKeyword
    END_GROUP     = SpatialKeywordClass

/* Locality*/
GROUP = Locality
OBJECT = LocalityContainer

    /* A separate container must be used for each set */
    /* of attribute values. Replace M with the ordinal */
    /* number of the container. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

```

```
OBJECT = LocalityDescription
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the LocalityContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual LocalityDescription to the right of "Value = " */
  Value = "string<255>"
END_OBJECT = LocalityDescription

OBJECT = LocalityType
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the LocalityContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual LocalityType to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = LocalityType

  END_OBJECT = LocalityContainer
END_GROUP = Locality

/* ProcessingLevel */
GROUP = ProcessingLevel
  OBJECT = ProcessingLevelDescription
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual ProcessingLevelDescription to the right of "Value = " */
    Value = "string<80>"
  END_OBJECT = ProcessingLevelDescription

  OBJECT = ProcessingLevelID
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    /* Substitute the actual ProcessingLevelID to the right of "Value = " */
    Value = "string<6>"
  END_OBJECT = ProcessingLevelID
END_GROUP = ProcessingLevel
```

```
/* Platform */
  GROUP = Platform
    OBJECT = PlatformContainer

      /* A separate container must be used for each set */
      /* of attribute values. Replace M with the ordinal */
      /* number of the PlatformContainer. */
      Data_Location = "NONE"
      Mandatory = "TRUE"
      Class = "M"

    OBJECT = PlatformShortName
      Data_Location = "MCF"
      Mandatory = "TRUE"
      /* Substitute ordinal number of the PlatformContainer for M */
      Class = "M"
      NUM_VAL = 1
      /* Substitute the actual PlatformShortName to the right of "Value = " */
      Value = "string<20>"
    END_OBJECT = PlatformShortName

  OBJECT = PlatformLongName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the PlatformContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual PlatformLongName to the right of "Value = " */
    Value = "string<80>"
  END_OBJECT = PlatformLongName

  OBJECT = PlatformType
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the PlatformContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual PlatformType to the right of "Value = " */
    Value = "string<20>"
  END_OBJECT = PlatformType
```

```
/* PlatformCharacteristic*/
```

```
GROUP = PlatformCharacteristic
```

```
/* Replace M with the ordinal number */
/* of the PlatformContainer*/
Class = "M"
```

```
OBJECT = PlatformCharacteristicContainer
```

```
/* A separate container must be used for each set */
/* of attribute values. Replace M with the ordinal */
/* number of the PlatformCharacteristicContainer. */
Data_Location = "NONE"
Mandatory = "TRUE"
Class = "M"
```

```
OBJECT = PlatformCharacteristicName
```

```
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* PlatformCharacteristicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual value of */
/* PlatformCharacteristicName to the right of "Value = " */
Value = "string<40>"
END_OBJECT = PlatformCharacteristicName
```

```
OBJECT = PlatformCharacteristicDescription
```

```
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* PlatformCharacteristicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual value of */
/* PlatformCharacteristicDescription to the right of "Value = " */
Value = "string<80>"
END_OBJECT = PlatformCharacteristicDescription
```

```
OBJECT = PlatformCharacteristicDataType
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* PlatformCharacteristicContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual value of */
  /* PlatformCharacteristicDataType to the right of "Value = " */
  Value = "string<8>"
END_OBJECT = PlatformCharacteristicDataType

OBJECT = PlatformCharacteristicUnit
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* PlatformCharacteristicContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual value of */
  /* PlatformCharacteristicUnit to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = PlatformCharacteristicUnit

/* PlatformCharacteristicValueClass*/

GROUP = PlatformCharacteristicValueClass

  /* Substitute ordinal number of the */
  /* PlatformCharacteristicContainer for M */
  Class = "M"

OBJECT = PlatformCharacteristicValue
  Data_Location = "MCF"
  Mandatory = "TRUE"
  NUM_VAL = 1
  /* Substitute the actual value of */
  /* PlatformCharacteristicValue to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = PlatformCharacteristicValue
```

```

        END_GROUP = PlatformCharacteristicValueClass

    END_OBJECT = PlatformCharacteristicContainer

END_GROUP = PlatformCharacteristic

/* Instrument*/

GROUP = Instrument

    /* Replace M with the ordinal number of the */
    /* PlatformContainer */
    Class = "M"

    OBJECT = InstrumentContainer

        /* A separate container must be used for each set */
        /* of attribute values. Replace M with the ordinal */
        /* number of the InstrumentContainer. */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

    /* Instrument */
    OBJECT = InstrumentShortName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* InstrumentContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual InstrumentShortName to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = InstrumentShortName

    OBJECT = InstrumentLongName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* InstrumentContainer for M */

```

```

        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual InstrumentLongName to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = InstrumentLongName

OBJECT = InstrumentTechnique
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual InstrumentTechnique to the right of "Value = " */
    Value = "string<80>"
    END_OBJECT = InstrumentTechnique

OBJECT = NumberofSensors
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual NumberofSensors to the right of "Value = " */
    /* Do not use quotes around the actual value */
    Value = "integer<>"
    END_OBJECT = NumberofSensors

/* OperationModeClass*/

GROUP = OperationModeClass

    /* Substitute ordinal number of the */
    /* InstrumentContainer for M */
    Class = "M"

    OBJECT = OperationMode
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute the actual number of OperationModes for n */

```

```

        NUM_VAL = n
        /* Substitute n OperationMode values to the right of the = */
        Value = ("string<20>", "string<20>")
        END_OBJECT = OperationMode
    END_GROUP = OperationModeClass

```

```
/* InstrumentCharacteristic*/
```

```
GROUP = InstrumentCharacteristic
```

```

/* Substitute ordinal number of the */
/* InstrumentContainer for M */
Class = "M"

```

```
OBJECT = InstrumentCharacteristicContainer
```

```

/* A separate container must be used for each set */
/* of attribute values. Replace M with the ordinal */
/* number of the InstrumentCharacteristicContainer. */
Data_Location = "NONE"
Mandatory = "TRUE"
Class = "M"

```

```
OBJECT = InstrumentCharacteristicName
```

```

    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentCharacteristicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual InstrumentCharacteristicName */
    /* to the right of "Value = " */
    Value = "string<40>"
    END_OBJECT = InstrumentCharacteristicName

```

```
OBJECT = InstrumentCharacteristicDescription
```

```

    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentCharacteristicContainer for M */
    Class = "M"

```

```

        NUM_VAL = 1
        /* Substitute the actual value of */
        /* InstrumentCharacteristicDescription to the right of "Value = " */
        Value = "string<80>"
    END_OBJECT = InstrumentCharacteristicDescription

OBJECT = InstrumentCharacteristicUnit
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentCharacteristicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* InstrumentCharacteristicUnit to the right of "Value = " */
    Value = "string<20>"
    END_OBJECT = InstrumentCharacteristicUnit

OBJECT = InstrumentCharacteristicDataType
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* InstrumentCharacteristicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* InstrumentCharacteristicDataType to the right of "Value = " */
    Value = "string<8>"
    END_OBJECT = InstrumentCharacteristicDataType

```

```
/* InstrumentCharacteristicValueClass*/
```

```

GROUP = InstrumentCharacteristicValueClass

    /* Substitute ordinal number of the */
    /* InstrumentCharacteristicContainer for M */
    Class = "M"

    OBJECT = InstrumentCharacteristicValue
        Data_Location = "MCF"
        Mandatory = "TRUE"

```

```

        NUM_VAL = 1
        /* Substitute the actual value of */
        /* InstrumentCharacteristicValue to the right of "Value = " */
        Value = "string<15>"
        END_OBJECT = InstrumentCharacteristicValue

    END_GROUP = InstrumentCharacteristicValueClass

END_OBJECT = InstrumentCharacteristicContainer

END_GROUP = InstrumentCharacteristic

/* Sensor*/

GROUP = Sensor

    /* Substitute ordinal number of the */
    /* InstrumentContainer for M */
    Class = "M"

    OBJECT = SensorContainer

        /* A separate container must be used for each set */
        /* of attribute values. Replace M with the ordinal */
        /* number of the SensorContainer. */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = SensorShortName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* SensorContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute the actual SensorShortName to the right of "Value = " */
            Value = "string<20>"
        END_OBJECT = SensorShortName

    OBJECT = SensorLongName

```

```
Data_Location = "MCF"  
Mandatory = "TRUE"  
/* Substitute ordinal number of the */  
/* SensorContainer for M */  
Class = "M"  
NUM_VAL = 1  
/* Substitute the actual SensorLongName to the right of "Value = " */  
Value = "string<80>"  
END_OBJECT = SensorLongName
```

```
OBJECT = SensorTechnique  
Data_Location = "MCF"  
Mandatory = "TRUE"  
/* Substitute ordinal number of the */  
/* SensorContainer for M */  
Class = "M"  
NUM_VAL = 1  
/* Substitute the actual SensorTechnique to the right of "Value = " */  
Value = "string<80>"  
END_OBJECT = SensorTechnique
```

```
/* SensorCharacteristic*/
```

```
GROUP = SensorCharacteristic  
  
/* Substitute ordinal number of the */  
/* SensorContainer for M */  
Class = "M"  
  
OBJECT = SensorCharacteristicContainer  
  
/* A separate container must be used for */  
/* each set of attribute values. Replace */  
/* M with the ordinal number of the */  
/* SensorCharacteristicContainer. */  
Data_Location = "NONE"  
Mandatory = "TRUE"  
Class = "M"  
  
/* SensorCharacteristic */  
OBJECT = SensorCharacteristicName
```

```

Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* SensorCharacteristicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual value of */
/* SensorCharacteristicName to the right of "Value = " */
Value = "string<40>"
END_OBJECT = SensorCharacteristicName

OBJECT = SensorCharacteristicDescription
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* SensorCharacteristicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual value of */
/* SensorCharacteristicDescription to the right of "Value = "
Value = "string<80>"
END_OBJECT = SensorCharacteristicDescription

OBJECT = SensorCharacteristicDataType
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* SensorCharacteristicContainer for M */
Class = "M"
NUM_VAL = 1
/* Substitute the actual value of */
/* SensorCharacteristicDataType to the right of "Value = " */
Value = "string<8>"
END_OBJECT = SensorCharacteristicDataType

OBJECT = SensorCharacteristicUnit
Data_Location = "MCF"
Mandatory = "TRUE"
/* Substitute ordinal number of the */
/* SensorCharacteristicContainer for M */

```

\*/

```
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* SensorCharacteristicUnit to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = SensorCharacteristicUnit

/* SensorCharacteristic*/

    GROUP = SensorCharacteristicValueClass

        /* Substitute ordinal number of the */
        /* SensorCharacteristicContainer for M */
        Class = "M"

        OBJECT = SensorCharacteristicValue
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            /* Substitute the actual value of */
            /* SensorCharacteristicValue to the right of "Value = " */
            Value = "string<80>"
        END_OBJECT = SensorCharacteristicValue

    END_GROUP = SensorCharacteristicValueClass

        END_OBJECT = SensorCharacteristicContainer
    END_GROUP = SensorCharacteristic

        END_OBJECT = SensorContainer
    END_GROUP = Sensor

        END_OBJECT = InstrumentContainer
    END_GROUP = Instrument

        END_OBJECT = PlatformContainer
    END_GROUP = Platform

/* AnalysisSource*/

    GROUP = AnalysisSource
```

```
OBJECT = AnalysisSourceContainer

/* A separate container must be used for each set */
/* of attribute values. Replace M with the ordinal */
/* number of the AnalysisSourceContainer. */
Data_Location = "NONE"
Mandatory = "TRUE"
Class = "M"

OBJECT = AnalysisShortName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* AnalysisSourceContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual AnalysisShortName to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = AnalysisShortName

OBJECT = AnalysisLongName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* AnalysisSourceContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual AnalysisLongName to the right of "Value = " */
  Value = "string<80>"
END_OBJECT = AnalysisLongName

OBJECT = AnalysisTechnique
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the */
  /* AnalysisSourceContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual AnalysisTechnique to the right of "Value = " */
  Value = "string<80>"
END_OBJECT = AnalysisTechnique
```

```
    OBJECT = AnalysisType
      Data_Location = "MCF"
      Mandatory = "TRUE"
      /* Substitute ordinal number of the */
      /* AnalysisSourceContainer for M */
      Class = "M"
      NUM_VAL = 1
      /* Substitute the actual AnalysisType to the right of "Value = " */
      Value = "string<20>"
    END_OBJECT = AnalysisType

  END_OBJECT = AnalysisSourceContainer

  END_GROUP = AnalysisSource

/* Project */
/* The Project group of attributes is used to set the EMS "Mission" */
/* to something other than the PlatformShortName for multi-plaform */
/* missions (like Operation IceBridge). */

  GROUP = Project
    OBJECT = ProjectContainer

      /* A separate container must be used for each set */
      /* of attribute values. Replace M with the ordinal */
      /* number of the ProjectContainer. */
      Data_Location = "NONE"
      Mandatory = "TRUE"
      Class = "M"

    OBJECT = ProjectShortName
      Data_Location = "MCF"
      Mandatory = "TRUE"
      /* Substitute ordinal number of the ProjectContainer for M */
      Class = "M"
      NUM_VAL = 1
      /* Substitute the actual ProjectShortName to the right of "Value = " */
      Value = "string<20>"
    END_OBJECT = ProjectShortName
```

```
OBJECT = ProjectLongName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the ProjectContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual ProjectLongName to the right of "Value = " */
  Value = "string<1024>"
END_OBJECT = ProjectLongName
```

```
END_OBJECT = ProjectContainer
END_GROUP = Project
```

```
/* Campaign*/
```

```
GROUP = Campaign
  OBJECT = CampaignContainer
```

```
  /* A separate container must be used for each set */
  /* of attribute values. Replace M with the ordinal */
  /* number of the CampaignContainer. */
  Data_Location = "NONE"
  Mandatory = "TRUE"
  Class = "M"
```

```
OBJECT = CampaignShortName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the CampaignContainer for M */
  Class = "M"
  NUM_VAL = 1
  /* Substitute the actual CampaignShortName to the right of "Value = " */
  Value = "string<20>"
END_OBJECT = CampaignShortName
```

```
OBJECT = CampaignLongName
  Data_Location = "MCF"
  Mandatory = "TRUE"
  /* Substitute ordinal number of the CampaignContainer for M */
  Class = "M"
  NUM_VAL = 1
```

```

        /* Substitute the actual CampaignLongName to the right of "Value = " */
        Value = "string<1024>"
        END_OBJECT = CampaignLongName

/* Format of CampaignStartDate is YYYY-MM-DD or YYYY-DDD */
OBJECT = CampaignStartDate
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the CampaignContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual CampaignStartDate to the right of "Value = " */
    Value = "date"
    END_OBJECT = CampaignStartDate

/* Format of CampaignEndDate is YYYY-MM-DD or YYYY-DDD */
OBJECT = CampaignEndDate
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the CampaignContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual CampaignEndDate to the right of "Value = " */
    Value = "date"
    END_OBJECT = CampaignEndDate

    END_OBJECT = CampaignContainer
END_GROUP = Campaign

/* CollectionAssociation*/
/*     NOTE: The ShortName and VersionID used in           */
/* CollectionAssociation refer to the ESDTs of data       */
/* products that are used to create or are created by the */
/* data type defined by a ESDT descriptor file. The      */
/* CollectionAssociation ShortName and VersionID values   */
/* should NOT match the ShortName and VersionID values  */
/* in GROUP = CollectionDescriptionClass at the start of  */
/* the COLLECTIONMETADATA section which are used to define */
/* a given ESDT.                                         */

```

```
GROUP = CollectionAssociation
  OBJECT = CollectionAssociationContainer

  /* A separate container must be used for each set */
  /* of attribute values. Replace M with the ordinal */
  /* number of the CollectionAssociationContainer. */
  Data_Location = "NONE"
  Mandatory = "TRUE"
  Class = "M"

  OBJECT = CollectionType
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* CollectionAssociationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual CollectionType to the right of "Value = " */
    Value = "string<20>"
  END_OBJECT = CollectionType

  OBJECT = CollectionUse
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* CollectionAssociationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual CollectionUse to the right of "Value = " */
    Value = "string<500>"
  END_OBJECT = CollectionUse

  OBJECT = ShortName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* CollectionAssociationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual associated ShortName to the right of "Value = " */
    Value = "string<24>"
```

```
END_OBJECT = ShortName
```

```
OBJECT = VersionID
```

```
  Data_Location = "MCF"
```

```
  Mandatory = "TRUE"
```

```
  /* Substitute ordinal number of the */
```

```
  /* CollectionAssociationContainer for M */
```

```
  Class = "M"
```

```
  NUM_VAL = 1
```

```
  /* Substitute the actual associated VersionID to the right of "Value = " */
```

```
  /* Do not use quotes around the actual value */
```

```
  Value = "integer<0..255>"
```

```
END_OBJECT = VersionID
```

```
  END_OBJECT = CollectionAssociationContainer
```

```
END_GROUP = CollectionAssociation
```

```
/* Review*/
```

```
GROUP = Review
```

```
  OBJECT = ReviewContainer
```

```
    /* A separate container must be used for each set */
```

```
    /* of attribute values. Replace M with the ordinal */
```

```
    /* number of the ReviewContainer. */
```

```
    Data_Location = "NONE"
```

```
    Mandatory = "TRUE"
```

```
    Class = "M"
```

```
  OBJECT = ScienceReviewDate
```

```
    Data_Location = "MCF"
```

```
    Mandatory = "TRUE"
```

```
    /* Substitute ordinal number of the ReviewContainer for M */
```

```
    Class = "M"
```

```
    NUM_VAL = 1
```

```
    /* Substitute the actual ScienceReviewDate to the right of "Value = " */
```

```
    Value = "date"
```

```
  END_OBJECT = ScienceReviewDate
```

```
  OBJECT = ScienceReviewStatus
```

```
    Data_Location = "MCF"
```

```
    Mandatory = "TRUE"  
    /* Substitute ordinal number of the ReviewContainer for M */  
    Class = "M"  
    NUM_VAL = 1  
    /* Substitute the actual ScienceReviewStatus to the right of "Value = " */  
    Value = "string<20>"  
END_OBJECT = ScienceReviewStatus
```

```
OBJECT = FutureReviewDate  
    Data_Location = "MCF"  
    Mandatory = "TRUE"  
    /* Substitute ordinal number of the ReviewContainer for M */  
    Class = "M"  
    NUM_VAL = 1  
    /* Substitute the actual FutureReviewDate to the right of "Value = " */  
    Value = "date"  
END_OBJECT = FutureReviewDate
```

```
    END_OBJECT = ReviewContainer  
END_GROUP = Review
```

```
/* CSDDescription*/
```

```
GROUP = CSDDescription
```

```
OBJECT = PrimaryCSDT  
    Data_Location = "MCF"  
    Mandatory = "TRUE"  
    NUM_VAL = 1  
    Value = "string<30>"  
END_OBJECT = PrimaryCSDT
```

```
OBJECT = IndirectReference  
    Data_Location = "MCF"  
    Mandatory = "TRUE"  
    NUM_VAL = 1  
    Value = "string<100>"  
END_OBJECT = IndirectReference
```

```
OBJECT = Implementation  
    Data_Location = "MCF"
```

```

    Mandatory = "TRUE"
    NUM_VAL = 1
    Value = "string<100>"
    END_OBJECT = Implementation

```

```

OBJECT = CSSTComments
    Data_Location = "MCF"
    Mandatory = "TRUE"
    NUM_VAL = 1
    Value = "string<255>"
    END_OBJECT = CSSTComments

```

```

END_GROUP = CSSTDescription

```

```

/* AdditionalAttributes*/

```

```

GROUP = AdditionalAttributes
    OBJECT = AdditionalAttributesContainer

```

```

    /* A separate container must be used for each set */
    /* of attribute values. Replace M with the ordinal */
    /* number of the AdditionalAttributesContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

```

```

OBJECT = AdditionalAttributeDatatype
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* AdditionalAttributesContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* AdditionalAttributeDatatype to the right of "Value = " */
    Value = "string<10>"
    END_OBJECT = AdditionalAttributeDatatype

```

```

OBJECT = AdditionalAttributeDescription
    Data_Location = "MCF"
    Mandatory = "TRUE"

```

```
    /* Substitute ordinal number of the */
    /* AdditionalAttributesContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual value of */
    /* AdditionalAttributeDescription to the right of "Value = " */
    Value = "string<255>"
END_OBJECT = AdditionalAttributeDescription

OBJECT = AdditionalAttributeName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* AdditionalAttributesContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute the actual value */
    /* PlatformCharacteristicDescription to the right of "Value = " */
    Value = "string<40>"
END_OBJECT = AdditionalAttributeName
```

```
/* PhysicalParameterDetails*/
```

```
GROUP = PhysicalParameterDetails
```

```
    /* Substitute ordinal number of the */
    /* AdditionalAttributesContainer for M */
    Class = "M"

    OBJECT = ParameterUnitsofMeasurement
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterUnitsofMeasurement to the right of "Value = " */
        Value = "string<20>"
    END_OBJECT = ParameterUnitsofMeasurement

    OBJECT = ParameterRangeBegin
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
```

```

        /* Substitute the actual ParameterRangeBegin to the right of "Value = " */
        Value = "string<40>"
    END_OBJECT = ParameterRangeBegin

    OBJECT = ParameterRangeEnd
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterRangeEnd to the right of "Value = " */
        Value = "string<40>"
    END_OBJECT = ParameterRangeEnd

    OBJECT = ParameterValueAccuracy
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterValueAccuracy to the right of "Value = " */
        Value = "string<30>"
    END_OBJECT = ParameterValueAccuracy

    OBJECT = ParameterValueAccuracyExplanation
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterValueAccuracyExplanation to the right of "Value =
" */
        Value = "string<255>"
    END_OBJECT = ParameterValueAccuracyExplanation

    OBJECT = ParameterMeasurementResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterMeasurementResolution to the right of "Value = "
*/
        Value = "string<30>"
    END_OBJECT = ParameterMeasurementResolution
    END_GROUP = PhysicalParameterDetails

/* InformationContent*/

```

```

GROUP = InformationContent

    /* Substitute ordinal number of the */
    /* AdditionalAttributesContainer for M */
    Class = "M"

    OBJECT = ParameterValue
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual ParameterValue to the right of "Value = " */
        Value = "string<255>"
    END_OBJECT = ParameterValue
END_GROUP = InformationContent

    END_OBJECT = AdditionalAttributesContainer
END_GROUP = AdditionalAttributes

/* StorageMediumClass*/

GROUP = StorageMediumClass
    OBJECT = StorageMedium
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute the actual number of StorageMedia for n */
        NUM_VAL = n
        /* Substitute n StorageMedia values to the right of the = */
        Value = ("string<30>", "string<30>")
    END_OBJECT = StorageMedium
END_GROUP = StorageMediumClass

END_GROUP = COLLECTIONMETADATA

GROUP = INVENTORYMETADATA
    GROUPTYPE = MASTERGROUP

/*
/* NOTE: Some of the attributes corresponding to the DID311 BNF do not
/* appear in the INVENTORYMETADATA portion of this ESDT descriptor
/* file template. For example, ProcessingHistoryPointer,
/* QAGranulePointer, BrowsePointer and UserCommentDocumentPointer are
/* not present in this file because they are not set by the science
*/
*/

```

```

/* software. */
/* */
/* The ODL Structure below for the INVENTORYMETADATA group follows the */
/* BNF broadly, but must also conform to the examples given in */
/* Appendix J of the "Release A SCF Toolkit Users Guide", November */
/* 1996 (333-CD-003-005). The INVENTORYMETADATA group is the basis for*/
/* data server generation of the Metadata Configuration File used by */
/* the PGE in setting the granule-level attribute values. */
/* */
/* NOTE: The ODL for each granule-level attribute in INVENTORYMETADATA */
/* can include a VALIDRULE field which is not provided in the actual */
/* ODL in the template below. VALIDRULE can be optionally added */
/* between the OBJECT/END_OBJECT for a given attribute in order to */
/* indicate a rule which can be applied to the values that are set by */
/* the science software for granule-level attributes. The VALIDRULE */
/* may take the form of "Match(value1, value2, value3, etc.)" */
/* to specify a valids list, or "Range(beginningvalue, endingvalue)" */
/* defines a range of valid values for a given attribute or */
/* "Expression(comparison operator, comparison value)" which defines a */
/* condition which the attribute value must meet. This */
/* provides the ESDT creators with a means of overriding the valids of */
/* a given ECS Core attribute by further restricting the acceptable */
/* values in an ESDT-specific manner. Commented out below is an */
/* hypothetical example of VALIDRULE in use: */
/* */
/*          OBJECT = OperationMode */
/*          Data_Location = "PGE" */
/*          Mandatory = "TRUE" */
/*          Class = "M" */
/*          TYPE = "STRING" */
/*          NUM_VAL = 1 */
/*          VALIDRULE = "Match(SCIENCE,CALIBRATION)" */
/*          END_OBJECT = OperationMode */
/* */

/* ECSDataGranule */
GROUP = ECSDataGranule

/* Note: SizeMBECSDataGranule will be set by DSS, */
/* not by the science software. */

```

```
OBJECT = SizeMBECSDataGranule
  Data_Location = "DSS"
  Mandatory = "FALSE"
  TYPE = "DOUBLE"
  NUM_VAL = 1
END_OBJECT = SizeMBECSDataGranule

OBJECT = ReprocessingPlanned
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <45> */
  NUM_VAL = 1
END_OBJECT = ReprocessingPlanned

OBJECT = ReprocessingActual
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = ReprocessingActual

OBJECT = LocalGranuleID
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <80> */
  NUM_VAL = 1
END_OBJECT = LocalGranuleID

OBJECT = DayNightFlag
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <5> */
  NUM_VAL = 1
END_OBJECT = DayNightFlag

/* Note: ProductionDateTime will not be set directly by */
/* the science software. The attribute value will instead */
/* be set automatically when the SDP Toolkit routine */
/* PGS_MET_Write is called by the science software. */
/* PGS_MET_Write writes the science software-populated */
```

```
/* INVENTORYMETADATA attribute values to an ASCII file */
/* for Data Server insert, and to an HDF-EOS file as */
/* appropriate. In addition, PGS_MET_Write automatically */
/* populates ProductionDateTime with the value of the */
/* time at which PGS_MET_Write was called, therefore */
/* capturing the time at which science software */
/* processing of a given data granule is being completed. */

OBJECT = ProductionDateTime
  Data_Location = "TK"
  Mandatory = "TRUE"
  TYPE = "DATETIME"
  NUM_VAL = 1
END_OBJECT = ProductionDateTime

OBJECT = LocalVersionID
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <60> */
  NUM_VAL = 1
END_OBJECT = LocalVersionID

END_GROUP = ECSDataGranule

/* MeasuredParameter */
GROUP = MeasuredParameter

  OBJECT = MeasuredParameterContainer

    Data_Location = "NONE"
    Class = "M"
    Mandatory = "TRUE"

    OBJECT = ParameterName
      Data_Location = "PGE"
      Mandatory = "TRUE"
      Class = "M"
      TYPE = "STRING" /* <40> */
      NUM_VAL = 1
    END_OBJECT = ParameterName
```

```

/* QAFlags */
/* Note: Only AutomaticQualityFlag and */
/* AutomaticQualityFlagExplanation will be set by the science */
/* software. The OperationalQualityFlag attributes might be */
/* set by the science software or by software at the DAAC. */
/* The Data_Location = "DP" of the ScienceQualityFlag */
/* attributes reflect the fact that they will be set through */
/* manual methods by a representative of the Data Provider. */
/* The Value = "Not Investigated" sets the default value for */
/* the ScienceQualityFlag. */
GROUP = QAFlags

Class = "M"

OBJECT = AutomaticQualityFlag
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <64> */
  NUM_VAL = 1
END_OBJECT = AutomaticQualityFlag

OBJECT = AutomaticQualityFlagExplanation
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <255> */
  NUM_VAL = 1
END_OBJECT = AutomaticQualityFlagExplanation

OBJECT = OperationalQualityFlag
  Data_Location = "PGE"
  Mandatory = "FALSE"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = OperationalQualityFlag

OBJECT = OperationalQualityFlagExplanation
  Data_Location = "PGE"
  Mandatory = "FALSE"
  TYPE = "STRING" /* <255> */
  NUM_VAL = 1
END_OBJECT = OperationalQualityFlagExplanation

```

```
OBJECT = ScienceQualityFlag
  Data_Location = "DP"
  Mandatory = "FALSE"
  TYPE = "STRING" /* <25> */
  NUM_VAL = 1
  Value = "Not Investigated"
END_OBJECT = ScienceQualityFlag

OBJECT = ScienceQualityFlagExplanation
  Data_Location = "DP"
  Mandatory = "FALSE"
  TYPE = "STRING" /* <255> */
  NUM_VAL = 1
END_OBJECT = ScienceQualityFlagExplanation

END_GROUP = QAFlags

/* QASStats */
GROUP = QASStats

  Class = "M"

OBJECT = QAPercentInterpolatedData
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "INTEGER"
  NUM_VAL = 1
END_OBJECT = QAPercentInterpolatedData

OBJECT = QAPercentMissingData
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "INTEGER"
  NUM_VAL = 1
END_OBJECT = QAPercentMissingData

OBJECT = QAPercentOutofBoundsData
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "INTEGER"
```

```
        NUM_VAL = 1
    END_OBJECT = QAPercentOutOfBoundsData

    OBJECT = QAPercentCloudCover
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "INTEGER"
        NUM_VAL = 1
    END_OBJECT = QAPercentCloudCover

    END_GROUP = QASTats

    END_OBJECT = MeasuredParameterContainer

    END_GROUP = MeasuredParameter

/* OrbitCalculatedSpatialDomain */
GROUP = OrbitCalculatedSpatialDomain
    OBJECT = OrbitCalculatedSpatialDomainContainer

        Data_Location = "NONE"
        Class = "M"
        Mandatory = "TRUE"

    OBJECT = OrbitalModelName
        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "STRING" /* <80> */
        NUM_VAL = 1
    END_OBJECT = OrbitalModelName

    OBJECT = OrbitNumber
        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "INTEGER"
        NUM_VAL = 1
    END_OBJECT = OrbitNumber

    OBJECT = StartOrbitNumber
```

```
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        Class = "M"  
        TYPE = "INTEGER"  
        NUM_VAL = 1  
    END_OBJECT = StartOrbitNumber  
  
    OBJECT = StopOrbitNumber  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        Class = "M"  
        TYPE = "INTEGER"  
        NUM_VAL = 1  
    END_OBJECT = StopOrbitNumber  
  
    OBJECT = EquatorCrossingLongitude  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        Class = "M"  
        TYPE = "DOUBLE"  
        NUM_VAL = 1  
    END_OBJECT = EquatorCrossingLongitude  
  
    OBJECT = EquatorCrossingTime  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        Class = "M"  
        TYPE = "TIME"  
        NUM_VAL = 1  
    END_OBJECT = EquatorCrossingTime  
  
    OBJECT = EquatorCrossingDate  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        Class = "M"  
        TYPE = "DATE"  
        NUM_VAL = 1  
    END_OBJECT = EquatorCrossingDate  
  
    END_OBJECT = OrbitCalculatedSpatialDomainContainer  
    END_GROUP = OrbitCalculatedSpatialDomain
```

```

/* CollectionDescriptionClass */
  GROUP = CollectionDescriptionClass

    OBJECT = ShortName
      Data_Location = "MCF"
      Mandatory = "TRUE"
      TYPE = "STRING"
      NUM_VAL = 1
      /* Substitute the actual ShortName to the right of "Value = " */
      Value = "string<24>"
    END_OBJECT = ShortName

    OBJECT = VersionID
      Data_Location = "MCF"
      Mandatory = "TRUE"
      TYPE = "INTEGER"
      NUM_VAL = 1
      /* Substitute the actual VersionID to the right of "Value = " */
      /* Do not use quotes around the actual value */
      Value = "integer<0..255>"
    END_OBJECT = VersionID

  END_GROUP = CollectionDescriptionClass

/* InputGranule */
  GROUP = InputGranule
    /* Because some PGEs may have on the order of a thousand */
    /* input data granules, InputPointer is being implemented */
    /* as an array of values and not as a Class = "M" ODL */
    /* structure. */
    /* In order to properly interface with SDP Toolkit routines */
    /* it is necessary that the MAX_NUM_INPUTPOINTERS shown */
    /* here be replaced with the ESDT-specific value of the */
    /* maximum number of input files for this ESDT. */
    OBJECT = InputPointer
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "STRING" /* <255> */
      NUM_VAL = MAX_NUM_INPUTPOINTERS
    END_OBJECT = InputPointer

```

```
END_GROUP = InputGranule
```

```
/* SpatialDomainContainer */
```

```
GROUP = SpatialDomainContainer
```

```
/* GranuleLocality */
```

```
GROUP = GranuleLocality
```

```
/* At the Granule-level, GranuleLocality consists only */
```

```
/* of the LocalityValue attribute. */
```

```
/* The implementation of LocalityValue is as an array */
```

```
/* of values and not as a Class = "M" ODL structure. */
```

```
/* In order to properly interface with the */
```

```
/* SDP Toolkit routines it is necessary that the */
```

```
/* MAX_NUM_LOCALITYVALUES shown here be replaced with */
```

```
/* the ESDT-specific value of the maximum possible */
```

```
/* number of LocalityValue instances for this ESDT. */
```

```
OBJECT = LocalityValue
```

```
Data_Location = "PGE"
```

```
Mandatory = "TRUE"
```

```
TYPE = "STRING" /* <80> */
```

```
NUM_VAL = MAX_NUM_LOCALITYVALUES
```

```
END_OBJECT = LocalityValue
```

```
END_GROUP = GranuleLocality
```

```
/* VerticalSpatialDomain */
```

```
GROUP = VerticalSpatialDomain
```

```
OBJECT = VerticalSpatialDomainContainer
```

```
Data_Location = "NONE"
```

```
Mandatory = "TRUE"
```

```
Class = "M"
```

```
OBJECT = VerticalSpatialDomainType
```

```
Data_Location = "PGE"
```

```
Mandatory = "TRUE"
```

```
Class = "M"
```

```
TYPE = "STRING" /* <20> */
```

```
NUM_VAL = 1
```

```
END_OBJECT = VerticalSpatialDomainType
```

```
OBJECT = VerticalSpatialDomainValue
```

```

        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "STRING" /* <20> */
        NUM_VAL = 1
    END_OBJECT = VerticalSpatialDomainValue

    END_OBJECT = VerticalSpatialDomainContainer
END_GROUP = VerticalSpatialDomain

/* HorizontalSpatialDomainContainer */
/* Note: HorizontalSpatialDomainContainer is not, strictly */
/* speaking, a container object of multiple sets of values. This */
/* attribute having 'Container' in its name is due to a naming */
/* anomaly in the BNF and Data Model. */

GROUP = HorizontalSpatialDomainContainer

/* ZoneIdentifierClass */
GROUP = ZoneIdentifierClass
    OBJECT = ZoneIdentifier
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING" /* <64> */
        NUM_VAL = 1
    END_OBJECT = ZoneIdentifier
END_GROUP = ZoneIdentifierClass

/* Only one of GPolygon, Bounding Rectangle, Point or Circle are to */
/* permitted for a given collection. */

/* GPolygon */
/* This is a Class = "M" ODL structure which is needed in */
/* order to support multiple attribute values. */
/* GRingPointLatitude, GRingPointLongitude and */
/* GRingPointSequenceNo will be arrays of values that will be */
/* set by the science software. */
/* In order to properly interface with SDP Toolkit routines it */
/* is necessary that the MAX_NUM_GRING_POINTS shown here be */
/* replaced with the ESDT-specific value of the maximum */

```

```

/* possible number of GRing points for this ESDT.  There must */
/* be at least three GRing points in this ESDT's Spatial */
/* definition. */
/* */
/* Note that while the BNF uses GPolygonContainer as the class */
/* name, the example in App. J has the group name as GPolygon */
/* and GPolygon used as the Class name here and in the */
/* COLLECTIONMETADATA poertion of this template. */

GROUP = GPolygon
  OBJECT = GPolygonContainer

  Data_Location = "NONE"
  Mandatory = "TRUE"
  Class = "M"

  GROUP = GRing

  Class = "M"

  OBJECT = ExclusionGRingFlag
  Data_Location = "PGE"
  Mandatory = "TRUE"
  NUM_VAL = 1
  TYPE = "STRING" /* <1> */
  END_OBJECT = ExclusionGRingFlag

END_GROUP = GRing

GROUP = GRingPoint

  Class = "M"

  OBJECT = GRingPointLatitude
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "DOUBLE"
  NUM_VAL = MAX_NUM_GRING_POINTS
  END_OBJECT = GRingPointLatitude

  OBJECT = GRingPointLongitude

```

```
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        TYPE = "DOUBLE"  
        NUM_VAL = MAX_NUM_GRING_POINTS  
    END_OBJECT = GRingPointLongitude  
  
    OBJECT = GRingPointSequenceNo  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        TYPE = "INTEGER"  
        NUM_VAL = MAX_NUM_GRING_POINTS  
    END_OBJECT = GRingPointSequenceNo  
  
    END_GROUP = GRingPoint  
  
    END_OBJECT = GPolygonContainer  
    END_GROUP = GPolygon  
  
/* BoundingRectangle */  
GROUP = BoundingRectangle  
    OBJECT = WestBoundingCoordinate  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        TYPE = "DOUBLE"  
        NUM_VAL = 1  
    END_OBJECT = WestBoundingCoordinate  
  
    OBJECT = NorthBoundingCoordinate  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        TYPE = "DOUBLE"  
        NUM_VAL = 1  
    END_OBJECT = NorthBoundingCoordinate  
  
    OBJECT = EastBoundingCoordinate  
        Data_Location = "PGE"  
        Mandatory = "TRUE"  
        TYPE = "DOUBLE"  
        NUM_VAL = 1  
    END_OBJECT = EastBoundingCoordinate
```

```
        OBJECT = SouthBoundingCoordinate
          Data_Location = "PGE"
          Mandatory = "TRUE"
          TYPE = "DOUBLE"
          NUM_VAL = 1
        END_OBJECT = SouthBoundingCoordinate
      END_GROUP = BoundingRectangle

/*   Point   */
GROUP = Point
  OBJECT = PointLongitude
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DOUBLE"
    NUM_VAL = 1
  END_OBJECT = PointLongitude

  OBJECT = PointLatitude
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DOUBLE"
    NUM_VAL = 1
  END_OBJECT = PointLatitude
END_GROUP = Point

/*   Circle   */
GROUP = Circle
  OBJECT = CenterLatitude
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DOUBLE"
    NUM_VAL = 1
  END_OBJECT = CenterLatitude

  OBJECT = CenterLongitude
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DOUBLE"
    NUM_VAL = 1
  END_OBJECT = CenterLongitude
```

```
OBJECT = RadiusValue
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "DOUBLE"
  NUM_VAL = 1
END_OBJECT = RadiusValue

OBJECT = RadiusUnits
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <10> */
  NUM_VAL = 1
END_OBJECT = RadiusUnits
END_GROUP = Circle

END_GROUP = HorizontalSpatialDomainContainer

END_GROUP = SpatialDomainContainer

/* RangeDateTime | SingleDateTime */
/* Specify either a single date/time or date/time range, but not both */

/* SingleDateTime */
GROUP = SingleDateTime

OBJECT = TimeOfDay
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "TIME"
  NUM_VAL = 1
END_OBJECT = TimeOfDay

OBJECT = CalendarDate
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "DATE"
  NUM_VAL = 1
END_OBJECT = CalendarDate

END_GROUP = SingleDateTime
```

```
/* RangeDateTime */
  GROUP = RangeDateTime

    OBJECT = RangeBeginningTime
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "TIME"
      NUM_VAL = 1
    END_OBJECT = RangeBeginningTime

    OBJECT = RangeEndingTime
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "TIME"
      NUM_VAL = 1
    END_OBJECT = RangeEndingTime

    OBJECT = RangeBeginningDate
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "DATE"
      NUM_VAL = 1
    END_OBJECT = RangeBeginningDate

    OBJECT = RangeEndingDate
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "DATE"
      NUM_VAL = 1
    END_OBJECT = RangeEndingDate

  END_GROUP = RangeDateTime

/* PGEVersionClass */
  GROUP = PGEVersionClass
    OBJECT = PGEVersion
      Mandatory = "TRUE"
      Data_Location = "PGE"
      TYPE = "STRING" /* <10> */
      NUM_VAL = 1
    END_OBJECT = PGEVersion
```

```

END_GROUP = PGEVersionClass

/* AncillaryInputGranule */
/* The B.0 BNF lists 0{AncillaryInputGranule}n, which */
/* further breaks down to the attributes: */
/* 0{AncillaryInputType + AncillaryInputPointer}n */
GROUP = AncillaryInputGranule
OBJECT = AncillaryInputGranuleContainer

    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

OBJECT = AncillaryInputType
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <20> */
    NUM_VAL = 1
END_OBJECT = AncillaryInputType

OBJECT = AncillaryInputPointer
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <255> */
    NUM_VAL = 1
END_OBJECT = AncillaryInputPointer

    END_OBJECT = AncillaryInputGranuleContainer
END_GROUP = AncillaryInputGranule

/* Review */
GROUP = Review
OBJECT = ReviewContainer

    Data_Location = "NONE"
    Class = "M"
    Mandatory = "TRUE"

OBJECT = ScienceReviewDate

```

```
        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "DATE"
        NUM_VAL = 1
    END_OBJECT = ScienceReviewDate

    OBJECT = ScienceReviewStatus
        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "STRING" /* <20> */
        NUM_VAL = 1
    END_OBJECT = ScienceReviewStatus

    OBJECT = FutureReviewDate
        Data_Location = "PGE"
        Mandatory = "TRUE"
        Class = "M"
        TYPE = "DATE"
        NUM_VAL = 1
    END_OBJECT = FutureReviewDate

    END_OBJECT = ReviewContainer
END_GROUP = Review

/* ProcessingQA */
    GROUP = ProcessingQA
        OBJECT = ProcessingQAContainer

            Data_Location = "NONE"
            Class = "M"
            Mandatory = "TRUE"

            OBJECT = ProcessingQADescription
                Data_Location = "PGE"
                Mandatory = "TRUE"
                Class = "M"
                TYPE = "STRING" /* <255> */
                NUM_VAL = 1
```

```

        END_OBJECT = ProcessingQADescription

        OBJECT = ProcessingQAAttribute
            Data_Location = "PGE"
            Mandatory = "TRUE"
            Class = "M"
            TYPE = "STRING" /* <80> */
            NUM_VAL = 1
        END_OBJECT = ProcessingQAAttribute

        END_OBJECT = ProcessingQAContainer
    END_GROUP = ProcessingQA

/* NOTE: The following block of ODL for AdditionalAttributes is */
/* commented out in this ESDT descriptor file template. This */
/* indicates that, while this information should not appear in an */
/* actual ESDT descriptor file, this block ODL must appear in any */
/* MCF that is generated from an ESDT's INVENTORYMETADATA */
/* section in place of the GROUP = ProductSpecificMetadata in the */
/* ESDT descriptor file, if any product-specific will be set for */
/* the given ESDT. The GROUP = ProductSpecificMetadata ODL appears */
/* in ESDT descriptor files, but not in MCFs. The text between the */
/* 'Begin MCF ODL block' and 'End MCF ODL block' comment lines must */
/* be used by either Data Server or the MetaDataWorks tool when a */
/* MCF is generated from an ESDT's INVENTORYMETADATA section, if */
/* product-specific attributes will be set by science software for */
/* granules corresponding to that ESDT. This AdditionalAttributes */
/* ODL must exist within MCFs if the SDP Toolkit APIs are to be */
/* used to successfully set product-specific attributes. */
/*
/* At the Granule-level AdditionalAttributes consists only of the */
/* AdditionalAttributeName attribute; this means that the */
/* COLLECTIONMETADATA section must contain corresponding definitions */
/* of AdditionalAttributeDescription & AdditionalAttributeDatatype */
/* for this specific AdditionalAttributeName. */
/* It is necessary to include NUM_VAL information for the component */
/* attribute ParameterValue in order to supply the information */
/* needed by SDP Toolkit routines. */
/* The NUM_VAL = MAX_NUM_PARAMETERVALUE must be replaced with the */
/* ESDT-specific value of the maximum possible number of Granule- */
/* level ParameterValue instances for this ESDT. */

```

```

/***** Begin MCF ODL block *****/
/*      GROUP = AdditionalAttributes          */
/*      OBJECT = AdditionalAttributesContainer */
/*
/*      Data_Location = "NONE"              */
/*      Class = "M"                         */
/*      Mandatory = "TRUE"                  */
/*
/*      /* AdditionalAttributes */          */
/*      OBJECT = AdditionalAttributeName     */
/*      Data_Location = "PGE"               */
/*      Mandatory = "TRUE"                  */
/*      Class = "M"                         */
/*      TYPE = "STRING" /* <40> */         */
/*      NUM_VAL = 1                         */
/*      END_OBJECT = AdditionalAttributeName */
/*
/*      /* InformationContent */           */
/*      GROUP = InformationContent          */
/*
/*      Class = "M"                         */
/*
/*      OBJECT = ParameterValue             */
/*      Data_Location = "PGE"               */
/*      Mandatory = "TRUE"                  */
/*      TYPE = "STRING" /* <255> */        */
/*      NUM_VAL = MAX_NUM_PARAMETERVALUE   */
/*      END_OBJECT = ParameterValue         */
/*
/*      END_GROUP = InformationContent       */
/*
/*      END_OBJECT = AdditionalAttributesContainer */
/*      END_GROUP = AdditionalAttributes    */
/***** End MCF ODL block *****/

/* The ProductSpecificMetadata section is a list of the */
/* actual Product-Specific attributes that may be set for */
/* a given granule of this ESDT. This section will be    */
/* parsed by Data Server, but will not appear in any MCF */

```

```

/* generated from an ESDT's INVENTORYMETADATA section. */
GROUP = ProductSpecificMetadata

/*      OBJECT = AverageRaindropSize      */
/*      Data_Location = "MCF"             */
/*      Mandatory = "TRUE"                */
/*      TYPE = FLOAT                       */
/*      LENGTH = "10"                     */
/*      MAXOCCURRENCES = "1"              */
/*      VALIDRULE = "Range(0.0, 350.0)"    */
/*      END_OBJECT = AverageRaindropSize   */

END_GROUP = ProductSpecificMetadata

/* OrbitParametersGranule */
/* OrbitParametersGranule will not be set by the */
/* science software but needs to appear in */
/* INVENTORYMETADATA anyway since SDP Toolkit */
/* functionality will set this the value of this */
/* attribute after the completion of the science */
/* software processing. OrbitParametersPointer */
/* will be represented as an array of values and */
/* not as a Class = "M" ODL structure. */
GROUP = OrbitParametersGranule

      OBJECT = OrbitParametersPointer
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "STRING" /* <255> */
      NUM_VAL = MAX_NUM_ORBITPARAMETERSPOINTERS
      END_OBJECT = OrbitParametersPointer

END_GROUP = OrbitParametersGranule

/* StorageMediumClass */
/* StorageMediumClass consists only of the StorageMedium */
/* attribute. The StorageMedium attribute is being */
/* implemented as an array of values and not as a */
/* Class = "M" ODL structure. In order to properly */
/* interface with SDP Toolkit routines it is necessary */

```

```

/* that the MAX_NUM_STORAGEMEDIUM shown here be replaced */
/* with the ESDT-specific value of the maximum possible */
/* number of StorageMedium instances for this ESDT.      */
  GROUP = StorageMediumClass
    OBJECT = StorageMedium
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "STRING" /* <30> */
      NUM_VAL = MAX_NUM_STORAGEMEDIUM
    END_OBJECT = StorageMedium
  END_GROUP = StorageMediumClass

```

```

/* AnalysisSource */
/* AnalysisShortName is being implemented as an */
/* array of values and not as a Class = "M" */
/* ODL structure. In order to properly interface */
/* with SDP Toolkit routines it is necessary that */
/* the MAX_NUM_ANALYSISSHORTNAME shown here be */
/* replaced with the ESDT-specific value of the */
/* maximum possible number of AnalysisShortName */
/* instances for this ESDT. */
  GROUP = AnalysisSource
    OBJECT = AnalysisShortName
      Data_Location = "PGE"
      Mandatory = "TRUE"
      TYPE = "STRING" /* <20> */
      NUM_VAL = MAX_NUM_ANALYSISSHORTNAME
    END_OBJECT = AnalysisShortName
  END_GROUP = AnalysisSource

```

```

/* Campaign */
/* CampaignShortName is being implemented as an */
/* array of values and not as a Class = "M" */
/* ODL structure. In order to properly interface */
/* with SDP Toolkit routines it is necessary that */
/* the MAX_NUM_CAMPAINSHORTNAME shown here be */
/* replaced with the ESDT-specific value of the */
/* maximum possible number of CampaignShortName */
/* instances for this ESDT. */
  GROUP = Campaign
    OBJECT = CampaignShortName

```

```

        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING" /* <20> */
        NUM_VAL = MAX_NUM_CAMPAIGNSHORTNAME
        END_OBJECT = CampaignShortName
    END_GROUP = Campaign

/* The B.0 ESDT descriptor file template implementation of          */
/* populating SensorCharacteristic attributes is to populate        */
/* 0-to-n sets of the following attributes:                          */

    GROUP = SensorCharacteristic
        OBJECT = SensorCharacteristicContainer

        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = PlatformShortName
            Data_Location = "PGE"
            Mandatory = "TRUE"
            /* The ordinal number of the */
            /* SensorCharacteristicContainer will replace M */
            Class = "M"
            TYPE = "STRING" /* <20> */
            NUM_VAL = 1
        END_OBJECT = PlatformShortName

        OBJECT = InstrumentShortName
            Data_Location = "PGE"
            Mandatory = "TRUE"
            /* The ordinal number of the */
            /* SensorCharacteristicContainer will replace M */
            Class = "M"
            TYPE = "STRING" /* <20> */
            NUM_VAL = 1
        END_OBJECT = InstrumentShortName

        OBJECT = SensorShortName
            Data_Location = "PGE"
            Mandatory = "TRUE"

```

```

        /* The ordinal number of */
        /* the SensorCharacteristicContainer will replace M */
        Class = "M"
        TYPE = "STRING" /* <20> */
        NUM_VAL = 1
    END_OBJECT = SensorShortName

OBJECT = SensorCharacteristicName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of the */
    /* SensorCharacteristicContainer will replace M */
    Class = "M"
    TYPE = "STRING" /* <40> */
    NUM_VAL = 1
END_OBJECT = SensorCharacteristicName

OBJECT = SensorCharacteristicValue
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of the */
    /* SensorCharacteristicContainer will replace M */
    Class = "M"
    TYPE = "STRING" /* <80> */
    NUM_VAL = 1
END_OBJECT = SensorCharacteristicValue

    END_OBJECT = SensorCharacteristicContainer
END_GROUP = SensorCharacteristic

/* The B.0 ESDT descriptor file template implementation of populating */
/* OperationMode attributes is to populate 0-to-n sets of the */
/* following attributes: */

GROUP = AssociatedPlatformInstrumentSensor
    OBJECT = AssociatedPlatformInstrumentSensorContainer

        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

```

```
OBJECT = AssociatedPlatformShortName
  Data_Location = "PGE"
  Mandatory = "TRUE"
  /* The ordinal number of the */
  /* AssociatedPlatformInstrumentSensorContainer will replace M */
  Class = "M"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = AssociatedPlatformShortName

OBJECT = AssociatedInstrumentShortName
  Data_Location = "PGE"
  Mandatory = "TRUE"
  /* The ordinal number of the */
  /* AssociatedPlatformInstrumentSensorContainer will replace M */
  Class = "M"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = AssociatedInstrumentShortName

OBJECT = AssociatedSensorShortName
  Data_Location = "PGE"
  Mandatory = "TRUE"
  /* The ordinal number of the */
  /* AssociatedPlatformInstrumentSensorContainer will replace M */
  Class = "M"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = AssociatedSensorShortName

OBJECT = OperationMode
  Data_Location = "PGE"
  Mandatory = "TRUE"
  /* The ordinal number of the */
  /* AssociatedPlatformInstrumentSensorContainer will replace M */
  Class = "M"
  TYPE = "STRING" /* <20> */
  NUM_VAL = 1
END_OBJECT = OperationMode

END_OBJECT = AssociatedPlatformInstrumentSensorContainer
```

```
END_GROUP = AssociatedPlatformInstrumentSensor
```

```
/* The ECS system ESDTs for ShortNames Browse, DAP, AP and SSAPC contain */
/* Granule-level Classes and attributes which are unique to those data */
/* types and do not appear in descriptor files of other ESDTs. The */
/* attributes and Data Model Classes which are specific to these four */
/* ESDTs are provided below. */
```

```
/****** Begin Browse-specific ODL block *****/
```

```
OBJECT = BrowseSize
  Data_Location = "DSS"
  Mandatory = "FALSE"
  TYPE = "FLOAT"
  NUM_VAL = 1
END_OBJECT = BrowseSize
```

```
OBJECT = BrowseDescription
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <255> */
  NUM_VAL = 1
```

```
END_OBJECT = BrowseDescription
```

```
/****** End Browse-specific ODL block *****/
```

```
/****** Begin DAP-specific ODL block *****/
```

```
OBJECT = DAPID
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <12> */
  NUM_VAL = 1
END_OBJECT = DAPID
```

```
OBJECT = DAPInsertDate
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "DATE"
  NUM_VAL = 1
END_OBJECT = DAPInsertDate
```

```
GROUP = PGEGroups
```

```
OBJECT = PGEGroupContainer

    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

OBJECT = DAPPGName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <20> */
    NUM_VAL = 1
END_OBJECT = DAPPGName

OBJECT = DAPPGEVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <10> */
    NUM_VAL = 1
END_OBJECT = DAPPGEVersion

OBJECT = DAPSWVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <12> */
    NUM_VAL = 1
END_OBJECT = DAPSWVersion

END_OBJECT = PGEGroupContainer

END_GROUP = PGEGroups
/***** End DAP-specific ODL block *****/

/***** Begin AP-specific ODL block *****/
OBJECT = AlgorithmPackageName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <80> */
```

```
    NUM_VAL = 1
END_OBJECT = AlgorithmPackageName

OBJECT = AlgorithmPackageVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <20> */
    NUM_VAL = 1
END_OBJECT = AlgorithmPackageVersion

OBJECT = AlgorithmPackageMaturityCode
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <10> */
    NUM_VAL = 1
END_OBJECT = AlgorithmPackageMaturityCode

OBJECT = AlgorithmPackageAcceptanceDate
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DATETIME"
    NUM_VAL = 1
END_OBJECT = AlgorithmPackageAcceptanceDate

OBJECT = DeliveryPurpose
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <20> */
    NUM_VAL = 1
END_OBJECT = DeliveryPurpose

OBJECT = PGENAME
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <30> */
    NUM_VAL = 1
END_OBJECT = PGENAME

OBJECT = PGEVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
```

```
        TYPE = "STRING" /* <20> */
        NUM_VAL = 1
    END_OBJECT = PGEVersion

OBJECT = PGEIdentifier
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <15> */
    NUM_VAL = 1
    END_OBJECT = PGEIdentifier

OBJECT = PGEFunction
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <80> */
    NUM_VAL = 1
    END_OBJECT = PGEFunction

OBJECT = PGEDateLastModified
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DATETIME"
    NUM_VAL = 1
    END_OBJECT = PGEDateLastModified

OBJECT = SWVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <12> */
    NUM_VAL = 1
    END_OBJECT = SWVersion

OBJECT = SWDateLastModified
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DATETIME"
    NUM_VAL = 1
    END_OBJECT = SWDateLastModified

GROUP = AssociatedCollections
```

```
OBJECT = AssociatedCollectionContainer

    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

OBJECT = APCollectionShortName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "STRING" /* <8> */
    NUM_VAL = 1
END_OBJECT = APCollectionShortName

OBJECT = APCollectionVersionID
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "INTEGER"
    NUM_VAL = 1
END_OBJECT = APCollectionVersionID

    END_OBJECT = AssociatedCollectionContainer
END_GROUP = AssociatedCollections
/***** End AP-specific ODL block *****/

/***** Begin SSAPC-specific ODL block *****/
OBJECT = ComponentType
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <40> */
    NUM_VAL = 1
END_OBJECT = ComponentType

OBJECT = ComponentName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING" /* <80> */
    NUM_VAL = 1
END_OBJECT = ComponentName
```

```
OBJECT = SSAPAlgorithmPackageName
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "STRING" /* <80> */
  NUM_VAL = 1
END_OBJECT = SSAPAlgorithmPackageName

OBJECT = SSAPInsertDate
  Data_Location = "PGE"
  Mandatory = "TRUE"
  TYPE = "DATETIME"
  NUM_VAL = 1
END_OBJECT = SSAPInsertDate

GROUP = AlgorithmPackageVersions

  OBJECT = AlgorithmPackageVersionContainer

    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = SSAPAlgPackageVersion
      Data_Location = "PGE"
      Mandatory = "TRUE"
      Class = "M"
      TYPE = "STRING" /* <20> */
      NUM_VAL = 1
    END_OBJECT = SSAPAlgPackageVersion

  END_OBJECT = AlgorithmPackageVersionContainer
END_GROUP = AlgorithmPackageVersions
/***** End SSAPC-specific ODL block *****/

END_GROUP = INVENTORYMETADATA

/* PGEs can write non-inventory metadata groups (e.g., ARCHIVEDMETADATA)*/
/* to HDF and HDF-EOS product files. The ODL describing these metadata */
/* must appear within the UNPARSEDMETADATA group description below in */
```

916-TDA-001 Rev:05

```
/* order for it to appear in the Science Data Server-generated MCF file */
/* so the SDP Toolkit Metadata Tools can be used to set the attribute */
/* values */

GROUP = UNPARSEDMETADATA
  /* GROUP = ARCHIVEDMETADATA */
  /* GROUPTYPE = MASTERGROUP */
  /* the ODL descriptions for this MASTERGROUP */
  /* END_GROUP = ARCHIVEDMETADATA */
END_GROUP = UNPARSEDMETADATA

END_GROUP = METADATA

  /* ESDT Services */
GROUP = SERVICE

  /* The Acquire Service */
OBJECT = ACQUIRE
CHECK_ORDER = FALSE          /* Only TRUE for Billing */

OBJECT = ECSUSERPROFILE
  MANDATORY = FALSE
END_OBJECT = ECSUSERPROFILE

OBJECT = ORDERID
  MANDATORY = FALSE
END_OBJECT = ORDERID

OBJECT = REQUESTID
  MANDATORY = TRUE
END_OBJECT = REQUESTID

OBJECT = DDISTNOTIFYTYPE
  MANDATORY = FALSE
  NUM_VAL = 2
  VALUelist = ("MAIL", "LIST")
END_OBJECT = DDISTNOTIFYTYPE

OBJECT = NOTIFY
  MANDATORY = FALSE
END_OBJECT = NOTIFY
```

```
OBJECT = SITE
  MANDATORY = FALSE
END_OBJECT = SITE

OBJECT = USERSTRING
  MANDATORY = FALSE
END_OBJECT = USERSTRING

  ADVERTISED = TRUE
END_OBJECT = ACQUIRE

/* The Insert Service */
OBJECT = INSERT
  CHECK_EXTRA = TRUE

  OBJECT = SHORTNAME
    MANDATORY = TRUE
  END_OBJECT = SHORTNAME

  OBJECT = VERSIONID
    MANDATORY = FALSE
  END_OBJECT = VERSIONID

/*To be added in B.1*/
/*OBJECT = COMPRESSION_FLAG*/
  /*MANDATORY = FALSE*/
/*END_OBJECT = COMPRESSION_FLAG*/

  OBJECT = MAINGROUP
    MANDATORY = TRUE

  OBJECT = SHORTNAME
    MANDATORY = TRUE
  END_OBJECT = SHORTNAME

  OBJECT = VERSIONID
    MANDATORY = FALSE
  END_OBJECT = VERSIONID

  OBJECT = METAFILEGROUP
```

```
MANDATORY = TRUE

OBJECT = METADATAFILE
  MANDATORY = TRUE
END_OBJECT = METADATAFILE
END_OBJECT = METAFILEGROUP

OBJECT = DATAFILEGROUP
  MANDATORY = TRUE

OBJECT = DATAFILE
  MANDATORY = TRUE
END_OBJECT = DATAFILE

OBJECT = FILETYPE
  MANDATORY = FALSE
END_OBJECT = FILETYPE
END_OBJECT = DATAFILEGROUP
END_OBJECT = MAINGROUP

OBJECT = BROWSEGROUP
  MANDATORY = FALSE

OBJECT = SHORTNAME
  MANDATORY = TRUE
END_OBJECT = SHORTNAME

OBJECT = VERSIONID
  MANDATORY = FALSE
END_OBJECT = VERSIONID

OBJECT = METAFILEGROUP
  MANDATORY = TRUE

OBJECT = METADATAFILE
  MANDATORY = TRUE
END_OBJECT = METADATAFILE
END_OBJECT = METAFILEGROUP

OBJECT = DATAFILEGROUP
  MANDATORY = TRUE
```

```
OBJECT = DATAFILE
  MANDATORY = TRUE
END_OBJECT = DATAFILE

OBJECT = FILETYPE
  MANDATORY = FALSE
END_OBJECT = FILETYPE
END_OBJECT = DATAFILEGROUP
END_OBJECT = BROWSEGROUP

OBJECT = QA
  MANDATORY = FALSE

OBJECT = SHORTNAME
  MANDATORY = TRUE
END_OBJECT = SHORTNAME

OBJECT = VERSIONID
  MANDATORY = FALSE
END_OBJECT = VERSIONID

OBJECT = METAFILEGROUP
  MANDATORY = TRUE

OBJECT = METADATAFILE
  MANDATORY = TRUE
END_OBJECT = METADATAFILE
END_OBJECT = METAFILEGROUP

OBJECT = DATAFILEGROUP
  MANDATORY = TRUE

OBJECT = DATAFILE
  MANDATORY = TRUE
END_OBJECT = DATAFILE

OBJECT = FILETYPE
  MANDATORY = FALSE
END_OBJECT = FILETYPE
END_OBJECT = DATAFILEGROUP
```

```
END_OBJECT = QA

OBJECT = PH
  MANDATORY = FALSE

  OBJECT = SHORTNAME
    MANDATORY = TRUE
  END_OBJECT = SHORTNAME

  OBJECT = VERSIONID
    MANDATORY = FALSE
  END_OBJECT = VERSIONID

  OBJECT = METAFILEGROUP
    MANDATORY = TRUE

    OBJECT = METADATAFILE
      MANDATORY = TRUE
    END_OBJECT = METADATAFILE
  END_OBJECT = METAFILEGROUP

  OBJECT = DATAFILEGROUP
    MANDATORY = TRUE

    OBJECT = DATAFILE
      MANDATORY = TRUE
    END_OBJECT = DATAFILE

    OBJECT = FILETYPE
      MANDATORY = FALSE
    END_OBJECT = FILETYPE
  END_OBJECT = DATAFILEGROUP
END_OBJECT = PH

OBJECT = LISTOFURS
  MANDATORY = FALSE

  OBJECT = UR
    MANDATORY = TRUE
  END_OBJECT = UR
END_OBJECT = LISTOFURS
```

```
    ADVERTISED = TRUE
END_OBJECT = INSERT

/* The Update Metadata Service */
OBJECT = UPDATEMETADATA
    ADVERTISED = TRUE
END_OBJECT = UPDATEMETADATA

/* The Browse Service */
OBJECT = BROWSE
    ADVERTISED = TRUE
END_OBJECT = BROWSE

/* The Get Queryable Parameter Service */
OBJECT = GETQUERYABLEPARAMETERS
    ADVERTISED = TRUE

    OBJECT = METADATATYPE
        MANDATORY = FALSE
    END_OBJECT = METADATATYPE
END_OBJECT = GETQUERYABLEPARAMETERS

/* The Inspect Service */
OBJECT = INSPECT
    ADVERTISED = TRUE

    OBJECT = METADATATYPE
        MANDATORY = FALSE
    END_OBJECT = METADATATYPE
END_OBJECT = INSPECT

/* The Inspect Collection Level service */
OBJECT = INSPECTCL
    ADVERTISED = TRUE

    OBJECT = METADATATYPE
        MANDATORY = FALSE
    END_OBJECT = METADATATYPE
END_OBJECT = INSPECTCL
```

```
/*The Delete service (deletes a granule)*/
OBJECT = DELETE
    ADVERTISED = TRUE
END_OBJECT = DELETE

/* The Delete From Archive service (deletes a granule but not metadata) */
/* Optional service */
OBJECT = DELETEDFROMARCHIVE
    ADVERTISED = TRUE
END_OBJECT = DELETEDFROMARCHIVE

/*The service for extracting information by Altitude (only)*/
OBJECT = EXTRACTALT
    ADVERTISED = TRUE
    CHECK_EXTRA = TRUE

    OBJECT = ALTINTERVALGROUP
        MANDATORY = FALSE
    OBJECT = ALTINTERVAL
        MANDATORY = FALSE
        OBJECT = ALTSTART
            MANDATORY = FALSE
            END_OBJECT = ALTSTART
        OBJECT = ALTSTOP
            MANDATORY = FALSE
            END_OBJECT = ALTSTOP
    END_OBJECT = ALTINTERVAL
END_OBJECT = ALTINTERVALGROUP

    OBJECT = ALTLEVELNAMEGROUP
        MANDATORY = FALSE
    OBJECT = ALTLEVELNAME
        MANDATORY = FALSE
    END_OBJECT = ALTLEVELNAME
END_OBJECT = ALTLEVELNAMEGROUP

OBJECT = FILENAME
    MANDATORY = FALSE
END_OBJECT = FILENAME
END_OBJECT = EXTRACTALT
```

/\*The service for extracting information by Area (only) by bounding box\*/

```
OBJECT = EXTRACTAREABB
  ADVERTISED = TRUE
  CHECK_EXTRA = TRUE
  OBJECT = BOUNDINGBOXGROUP
    MANDATORY = TRUE
  OBJECT = BOUNDINGBOX
    Mandatory = TRUE

  OBJECT = UPPERLEFTLAT
    MANDATORY = TRUE
  END_OBJECT = UPPERLEFTLAT

  OBJECT = UPPERLEFTLONG
    MANDATORY = TRUE
  END_OBJECT = UPPERLEFTLONG

  OBJECT = LOWERRIGHTLAT
    MANDATORY = TRUE
  END_OBJECT = LOWERRIGHTLAT

  OBJECT = LOWERRIGHTLONG
    MANDATORY = TRUE
  END_OBJECT = LOWERRIGHTLONG

  END_OBJECT = BOUNDINGBOX
END_OBJECT = BOUNDINGBOXGROUP

OBJECT = FILENAME
  MANDATORY = FALSE
END_OBJECT = FILENAME
END_OBJECT = EXTRACTAREABB
```

/\*The service for extracting information by Area (only) by WRS Row, Path\*/

```
OBJECT = EXTRACTAREAWRS
  ADVERTISED = TRUE
  OBJECT = WRSGROUP
    MANDATORY = TRUE
  OBJECT = WRS
    MANDATORY = TRUE
  OBJECT = WRSROW
```

```
        MANDATORY = TRUE
        END_OBJECT = WRSROW
        OBJECT = WRSPATH
        MANDATORY = TRUE
        END_OBJECT = WRSPATH
        END_OBJECT = WRS
    END_OBJECT = WRSGROUP
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTAREAWRS
```

```
/*The service for extracting information by Parameter (only)*/
```

```
    OBJECT = EXTRACTPARAMETER
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
```

```
/*Parameters, either ECSPParameterKeywords or Cl PS Parameters*/
```

```
    OBJECT = SUBSETPARAMETERGROUP
        MANDATORY = TRUE
    OBJECT = SUBSETPARAMETER
        MANDATORY = FALSE
    END_OBJECT = SUBSETPARAMETER
    END_OBJECT = SUBSETPARAMETERGROUP
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTPARAMETER
```

```
/*The service for extracting information by Time (only)*/
```

```
    OBJECT = EXTRACTTIME
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
    OBJECT = TIMEINTERVALGROUP
        MANDATORY = TRUE
    OBJECT = RANGEBEGINNINGTIME
        MANDATORY = TRUE
    END_OBJECT = RANGEBEGINNINGTIME

    OBJECT = RANGEENDINGTIME
        MANDATORY = TRUE
    END_OBJECT = RANGEENDINGTIME
```

```
OBJECT = RANGEBEGINNINGDATE
  MANDATORY = TRUE
END_OBJECT = RANGEBEGINNINGDATE
```

```
OBJECT = RANGEENDINGDATE
  MANDATORY = TRUE
END_OBJECT = RANGEENDINGDATE
```

```
END_OBJECT = TIMEINTERVALGROUP
```

```
OBJECT = FILENAME
  MANDATORY = FALSE
END_OBJECT = FILENAME
END_OBJECT = EXTRACTTIME
```

```
/*The service for extracting information by Rows (Swath products only)*/
```

```
OBJECT = EXTRACTROW
  ADVERTISED = TRUE
  CHECK_EXTRA = TRUE
  OBJECT = ROWINTERVALGROUP
    MANDATORY = TRUE
  OBJECT = ROWINTERVAL
    MANDATORY = TRUE
  OBJECT = STARTROW
    MANDATORY = TRUE
  END_OBJECT = STARTROW
  OBJECT = STOPROW
    MANDATORY = TRUE
    END_OBJECT = STOPROW
  END_OBJECT = ROWINTERVAL
  END_OBJECT = ROWINTERVALGROUP
OBJECT = FILENAME
  MANDATORY = FALSE
END_OBJECT = FILENAME
END_OBJECT = EXTRACTROW
```

```
/*The service for extracting information by multiple means, area by*/
```

```
/*WRS Row, Path*/
```

```
OBJECT = EXTRACTMULTIWRS
  ADVERTISED = TRUE
```



```
        END_OBJECT = ALTSTOP
END_OBJECT = ALTINTERVAL
END_OBJECT = ALTINTERVALGROUP

OBJECT = ALTLEVELNAMEGROUP
    MANDATORY = FALSE
OBJECT = ALTLEVELNAME
    MANDATORY = TRUE
END_OBJECT = ALTLEVELNAME
END_OBJECT = ALTLEVELNAMEGROUP

OBJECT = SUBSETPARAMETERGROUP
    MANDATORY = FALSE
OBJECT = SUBSETPARAMETER
    MANDATORY = TRUE
END_OBJECT = SUBSETPARAMETER
END_OBJECT = SUBSETPARAMETERGROUP
OBJECT = ROWINTERVALGROUP
    MANDATORY = FALSE
OBJECT = ROWINTERVAL
    MANDATORY = TRUE
OBJECT = STARTROW
    MANDATORY = TRUE
END_OBJECT = STARTROW
OBJECT = STOPROW
    MANDATORY = TRUE
END_OBJECT = STOPROW
END_OBJECT = ROWINTERVAL
END_OBJECT = ROWINTERVALGROUP

OBJECT = FILENAME
    MANDATORY = FALSE
END_OBJECT = FILENAME
END_OBJECT = EXTRACTMULTIWRS
```

/\*The service for extracting information by multiple means, area by\*/

/\*Bounding Box\*/

```
OBJECT = EXTRACTMULTIBB
    ADVERTISED = TRUE
OBJECT = BOUNDINGBOXGROUP
    MANDATORY = FALSE
```

```
OBJECT = BOUNDINGBOX
  Mandatory = TRUE
OBJECT = UPPERLEFTLAT
  MANDATORY = TRUE
END_OBJECT = UPPERLEFTLAT
OBJECT = UPPERLEFTLONG
  MANDATORY = TRUE
END_OBJECT = UPPERLEFTLONG
OBJECT = LOWERRIGHTLAT
  MANDATORY = TRUE
  END_OBJECT = LOWERRIGHTLAT
OBJECT = LOWERRIGHTLONG
  MANDATORY = TRUE
END_OBJECT = LOWERRIGHTLONG
END_OBJECT = BOUNDINGBOX
END_OBJECT = BOUNDINGBOXGROUP

OBJECT = TIMEINTERVALGROUP
  MANDATORY = FALSE
OBJECT = RANGEBEGINNINGTIME
  MANDATORY = TRUE
END_OBJECT = RANGEBEGINNINGTIME

OBJECT = RANGEENDINGTIME
  MANDATORY = TRUE
END_OBJECT = RANGEENDINGTIME

OBJECT = RANGEBEGINNINGDATE
  MANDATORY = TRUE
END_OBJECT = RANGEBEGINNINGDATE

OBJECT = RANGEENDINGDATE
  MANDATORY = TRUE
END_OBJECT = RANGEENDINGDATE
END_OBJECT = TIMEINTERVALGROUP

OBJECT = ALTINTERVALGROUP
  MANDATORY = FALSE
OBJECT = ALTINTERVAL
  MANDATORY = TRUE
  OBJECT = ALTSTART
```

```
                MANDATORY = TRUE
            END_OBJECT = ALTSTART
        OBJECT = ALTSTOP
            MANDATORY = TRUE
            END_OBJECT = ALTSTOP
        END_OBJECT = ALTINTERVAL
        END_OBJECT = ALTINTERVALGROUP

        OBJECT = ALTLEVELNAMEGROUP
            MANDATORY = FALSE
        OBJECT = LEVEL
            MANDATORY = TRUE
        END_OBJECT = LEVEL
        END_OBJECT = ALTLEVELNAMEGROUP
        OBJECT = SUBSETPARAMETERGROUP
            MANDATORY = FALSE
        OBJECT = SUBSETPARAMETER
            MANDATORY = TRUE
        END_OBJECT = SUBSETPARAMETER
    END_OBJECT = SUBSETPARAMETERGROUP
    OBJECT = ROWINTERVALGROUP
        MANDATORY = FALSE
    OBJECT = ROWINTERVAL
        MANDATORY = TRUE
    OBJECT = STARTROW
        MANDATORY = TRUE
    END_OBJECT = STARTROW
    OBJECT = STOPROW
        MANDATORY = TRUE
        END_OBJECT = STOPROW
    END_OBJECT = ROWINTERVAL
    END_OBJECT = ROWINTERVALGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTMULTIBB
```

```
/*The service for applying a mask (selected products only)*/
    OBJECT = APPLYMASK
        ADVERTISED = TRUE
```

```

    OBJECT = MASK
        MANDATORY = TRUE
    END_OBJECT = MASK
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = APPLYMASK

```

```
/*The service for swath width reduction (selected products only)*/
```

```

    OBJECT = EXTRACTNARROW
        ADVERTISED = TRUE
        OBJECT = PIXELINTERVAL
            MANDATORY = TRUE
        OBJECT = STARTPIXEL
            MANDATORY = TRUE
        END_OBJECT = STARTPIXEL
        OBJECT = STOPIXEL
            MANDATORY = TRUE
        END_OBJECT = STOPIXEL
        END_OBJECT = PIXELINTERVAL
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTNARROW
END_GROUP = SERVICE

```

```
/* ESDT Data Type Structure */
```

```

GROUP = STRUCTURE
    OBJECT = STRUCTURE
        CSDTType = "Projected Grid"
        /*CSDTType must equal one of the valids for attribute PrimaryCSDT*/
        CSDTInterfaceType = Conformant
        /*CSDTInterfaceType equals one {Conformant, NonConformant, ConformantWSwath, NonConformantWSwath}*/
        CSDTImplementation = EOSHDF
        /*{Other CSDTImplementation valids TBD, but will include IMAGE and RAW}*/
    END_OBJECT = STRUCTURE
END_GROUP = STRUCTURE

```

```
GROUP = EVENT
```

```
/* Delete Event */
```

```

OBJECT = DELETE
  DESCRIPTION = "A granule of ESDTemplateName type was deleted from the DataServer's holdings"
  CATEGORY = ESDT
  OBJECT = EVENTPARMS
    ARGUMENTS = UR
    TYPE = STRING

    /*****/
    /* The "Qualified Events" are listed as */
    /* a series of OBJECT, END_OBJECT pairs */
    /* for each granule-level attribute */
    /* which may be used to establish */
    /* qualifiers for a subscription. */
    /* */
    /* Qualified Events for DELETE go here, */
    /* e.g. */
    /* */
    /* OBJECT = TimeofDay */
    /* END_OBJECT = TimeofDay */
    /* */
    /* OBJECT = CalendarDate */
    /* END_OBJECT = CalendarDate */
    /* */
    /*****/

  END_OBJECT = EVENTPARMS
END_OBJECT = DELETE

/* Insert Event */
/* With a few exceptions, most all of the attributes defined as OBJECTS in the */
/* INVENTORYMETADATA section of the Descriptor file are listed, including those */
/* in the ProductSpecificMetadata group. */
/* */
/* The exceptions are: */
/* */
/* Container Objects (although the objects defined within the container are */
/* to be included in the list of qualified events) */
/* */
/* ShortName */
/* VersionID */
/* InputPointer */

```

```

/* AncillaryInputType */
/* AncillaryInputPointer */
/* OrbitalParametersPointer */
/*
/*****
OBJECT = INSERT
  DESCRIPTION = "A granule of ESDTemplateName type was added to the DataServer's holdings"
  CATEGORY = ESDT
  OBJECT = EVENTPARMS
    ARGUMENTS = UR
    TYPE = STRING

    /*****/
    /* The "Qualified Events" are listed as */
    /* a series of OBJECT, END_OBJECT pairs */
    /* for each granule-level attribute */
    /* which may be used to establish */
    /* qualifiers for a subscription. */
    /*
    /* Qualified Events for INSERT go here, */
    /* e.g. */
    /*
    /* OBJECT = TimeOfDay */
    /* END_OBJECT = TimeOfDay */
    /*
    /* OBJECT = CalendarDate */
    /* END_OBJECT = CalendarDate */
    /*
    /*****/

  END_OBJECT = EVENTPARMS
END_OBJECT = INSERT

/* Update Metadata Event */
/* With a few exceptions, most all of the attributes defined as OBJECTS in the */
/* INVENTORYMETADATA section of the Descriptor file are listed, including those */
/* in the ProductSpecificMetadata group. */
/*
/* The exceptions are: */
/*
/* Container Objects (although the objects defined within the container are */

```

```

/*          to be included in the list of qualified events)          */
/* ShortName          */
/* VersionID          */
/* InputPointer          */
/* AncillaryInputType          */
/* AncillaryInputPointer          */
/* OrbitalParametersPointer          */
/*          */
/*****/
OBJECT = UPDATEMETADATA
DESCRIPTION = "The metadata for this granule (of type ESDTemplateName) has been modified"
CATEGORY = ESDT
OBJECT = EVENTPARMS
  ARGUMENTS = UR
  TYPE = STRING

  /*****/
  /* Qualified Events for UPDATEMETADATA */
  /* go here, e.g.          */
  /*          */
  /* OBJECT = TimeOfDay          */
  /* END_OBJECT = TimeOfDay          */
  /*          */
  /* OBJECT = CalendarDate          */
  /* END_OBJECT = CalendarDate          */
  /*          */
  /*****/

  END_OBJECT = EVENTPARMS
END_OBJECT = UPDATEMETADATA
END_GROUP = EVENT

/* End Descriptor File marker */
END

```